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SECRETARY OF THE AIR FORCE**

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This publication establishes effective and safe operations of the F-16 and implements AFD 11-2, *Aircrew Operations*; AFD 11-4, *Aviation Service*; and AFI 11-202V3, *General Flight Rules*. It establishes the minimum Air Force operations procedures for personnel performing duties in the F-16. This publication applies to the US Air Force Reserve Command (AFRC) and the Air National Guard (ANG). MAJCOMs, Direct Reporting Units (DRU) and Field Operating Agencies (FOA) will forward proposed MAJCOM/DRU/FOA-level supplements to this volume to HQ USAF/A3O-AI, through HQ ACC/A3TO, for approval prior to publication IAW AFD 11-2, paragraph 2.2. Copies of approved and published supplements will be provided by the issuing office to HQ USAF/A3O-AI, HQ ACC/A3TO, and the user MAJCOM/ DRU/FOA offices of primary responsibility (OPR). Field units below MAJCOM/DRU/FOA level will forward copies of their supplements of this publication to their parent MAJCOM/DRU/FOA OPR for post-publication review. **Note:** The above applies only to those DRUs/FOAs that report directly to HQ USAF. Keep supplements current by complying with AFI 33-360, *Publications and Forms Management*. Unless another approval authority is cited, waiver authority for this

volume is the MAJCOM/A3, or COMAFFOR for those aircrew and assets under the COMAFFOR's oversight. Requests for waivers must be submitted through the chain of command to the appropriate Tier waiver approval authority or if a non-tier requirement, to the publication OPR for consideration. COMAFFOR will notify HQ ACC/A3 and home station MAJCOM/A3 of waivers within 72 hours of approval. Refer recommended changes and questions about this publication to the Office of Primary Responsibility (OPR) using the AF Form 847, *Recommendation for Change of Publication*; route AF Forms 847 from the field through the appropriate functional chain of command. HQ ACC/A3 will coordinate all changes to the basic volume with all MAJCOM/A3s. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS), located in the Air Force Records Information Management System (AFRIMS). **Note:** This instruction contains references to the following field (subordinate level) publications and forms which, until converted to departmental level publications and forms may be obtained from the respective MAJCOM publication distribution office.

(AVIANOAB) AFI 11-2F-16, Volume 3, dated 18 December 2013 is supplemented as follows: The purpose of this supplement is to provide guidance and procedures specific to F-16 operations. This supplement applies to all personnel assigned to the 31st Operations Group (OG), Aviano AB, Italy. Waiver authority for this instruction rests with the 31 OG/CC. Written waiver requests will be submitted to the 31 OG/CC through 31 OG/OGV in MFR format. Ensure that all records created as a result of processes prescribed in this publication are maintained in accordance with AFMAN 33-363, *Management of Records*, and disposed of in accordance with the Air Force Records Disposition Schedule (RDS) located on the Air Force Portal in AFRIMS. Send comments and suggestions for improvements to this supplement on AF Form 847, *Recommendation for Change of Publication*, through your chain of command to 31 OG/OGV, unit 6170, APO AE, 09604-6170, or via email at 31OGST.OGV@usafe.ds.af.mil.

SUMMARY OF CHANGES

This document has been substantially revised and must be completely reviewed. Major changes include: over water flight waivers, Digital Terrain System planning, ARTS/PARS guidance, removal of TFR procedures, targeting pod procedures, AIFF interrogation usage, trail recovery procedures, simulated gun employment, hung ordnance recovery changes, configuration changes for HARTS maneuvers, wake turbulence landing spacing, G-Awareness exercise procedures, NVG procedures, HUD as a primary flight reference, CAT D approach usage, air abort addition, hung ordnance change, SAR procedures addition, identifies Tiered waiver authorities for unit level compliance items, and numerous administrative changes.

(AVIANOAB) The following change references include the reference paragraph in parenthesis. If a line was deleted altogether and does not have a reference line number in this new publication, then the paragraph reference for the previous supplement is referenced, annotated with an "old" prior to the paragraph reference. Major changes include: local weather procedures (8.1.2.8.1), canopy sheeting guidance (8.1.2.9.8), removed Rwy 23 ops on the 23rd of each month, EGI requirements (8.1.3.3.3), hot pit flow directions (8.1.3.4.1), latecomer procedures (8.1.4.1.10), supersonic flight (8.1.4.2.3), Grappa procedures (8.1.4.7.2.5/8.1.4.7.3.4), reduced

same runway separation (8.1.4.11), EPU activation (8.1.6.5), hot brake procedures (8.1.6.6), ALE-50 fail to sever (8.1.6.9.4), jettison procedures (8.1.6.11), controlled bailout location (8.1.6.12). Incorporates FCIF 11-13 (North Hot Pit Procedures), 12-04 (Single Ship Missions to Slunj Range), 12-08 (Latecomer Procedures), 12-09/10 (ALE-50 Procedures), 12-11 (Canopy Sheeting Guidance), 12-21 (Reduced Same Runway Separation), 12-28 (Alternate EPU/Hydrazine/Hot brake area), IC-1, and IC-2.

Chapter 1—GENERAL GUIDANCE	8
1.1. Responsibilities.	8
Chapter 2—MISSION PLANNING	9
Section 2A—General	9
2.1. Responsibilities.	9
2.2. Bird/Wildlife Aircraft Strike Hazard (BASH) Programs.	9
2.3. Standards.	9
2.4. CBRNE.	9
2.5. Flight Material Preparation.	9
2.6. Fuel Conservation.	10
2.7. Overwater.	10
2.8. Briefing and Debriefing.	11
2.9. Unit Developed Checklists/Local Pilot Aids.	12
Section 2B—Night (see also night sections of Chapter 3, Chapter 5 and Chapter 6)	12
2.10. Minimum Safe Altitude (MSA).	12
2.11. Night chart requirements.	13
Chapter 3—NORMAL OPERATING PROCEDURES	14
Section 3A—Ground Operations	14
3.1. Preflight.	14
3.2. Ground Visual Signals.	14
3.3. Taxi and Arming.	15
3.4. EOR Inspections and Before Takeoff Checks.	15
3.5. Flight Lineup.	16
Section 3B—Takeoff and Departure	16
3.6. Takeoff.	16
3.7. Initial Join-up and Rejoins.	17

Section 3C—Enroute	17
3.8. Air Refueling.	17
3.9. Aircraft Handling Characteristics (AHC) and Automated Recovery Training Series (ARTS)/Maneuvering Parameters.	17
3.10. Formation, General.	18
3.11. G-Awareness Exercises (G-Ex) (Reference AFTTP 3-3.	19
3.12. Tactical Formations.	20
3.13. Chase Formation.	20
3.14. Show Formation.	21
3.15. Low Altitude Operations (reference AFTTP 3-1.	21
Section 3D—Recovery and Landing	22
3.16. Gear Checks.	22
3.17. Angle of Attack (AOA).	22
3.18. Landing restrictions.	22
3.19. Desired touchdown point and spacing.	22
3.20. Low Approaches.	23
3.21. Touch-and-Go Landings.	23
3.22. Overhead Traffic Patterns.	23
3.23. Tactical Overhead Traffic Patterns.	23
3.24. Closed Traffic Patterns.	24
3.25. Back Seat Approaches and Landings.	24
3.26. Formation Approaches and Landings.	24
Section 3E—Night (see also night sections of Chapter 2, Chapter 5 and Chapter 6)	25
3.27. General Night Procedures.	25
3.28. Night Vision Goggles (NVG) Procedures.	25
Section 3F—Other	27
3.29. Targeting Pod Operations.	27
3.30. Radio Procedures.	27
3.31. Lap Belts.	28
3.32. Change of Aircraft Control.	28
3.33. Fuel Requirements.	28
3.34. Radar Altimeters and Terrain Warning/Avoidance Systems.	29
3.35. ALOW Setting.	29

3.36.	Wind and Sea State Restrictions.	29
3.37.	Airborne Interrogator Friend Foe (AIFF) Operation.	29
Chapter 4—	INSTRUMENT PROCEDURES	30
4.1.	General.	30
4.2.	Takeoff and Initial Join-up.	30
4.3.	Trail Procedures.	30
4.4.	Formation Break-up.	32
4.5.	Formation Penetration.	32
4.6.	Formation Approach.	33
4.7.	Instrument Approach Procedures.	33
Chapter 5—	AIR-TO-AIR WEAPONS EMPLOYMENT	34
5.1.	General.	34
5.2.	Simulated Gun Employment.	34
5.3.	Maneuvering Limitations.	34
CHAPTER 6—	AIR-TO-SURFACE WEAPONS EMPLOYMENT	35
Section 6A—	General	35
6.1.	General.	35
6.2.	Simulated Gun Employment.	35
6.3.	Training Missions with a Hot Gun.	35
6.4.	Simulated Attacks against off-Range or Manned Targets.	35
6.5.	Weather.	35
6.6.	Pop-Up Attacks.	35
6.7.	Target Identification.	35
6.8.	Safety of Ground Personnel.	36
Section 6B—	Night	36
6.9.	Altitude.	36
6.10.	Bank Angle.	36
Chapter 7—	ABNORMAL OPERATING PROCEDURES	37
7.1.	General.	37
7.2.	Critical Action Procedures (CAPs).	37
7.3.	Ground Aborts.	37
7.4.	Takeoff Aborts.	38

7.5.	Air Aborts.	38
7.6.	Radio Failure (NORDO).	38
7.7.	Severe Weather Penetration.	40
7.8.	Spatial Disorientation (SD).	40
7.9.	Lost Wingman.	40
7.10.	Armament System Malfunctions.	41
7.11.	In-flight Practice of Emergency Procedures.	42
7.12.	Search and Rescue (SAR) Procedures.	43
7.13.	Post Arresting Gear Engagement Procedures.	43
Chapter 8—	LOCAL OPERATING PROCEDURES	44
8.1.	General.	44
8.1.	(AVIANOAB) General.	44
Figure 8.1.	(Added-AVIANOAB) Ice FOD Procedures.	51
Table 8.1.	(Added-AVIANOAB) Aircraft Arresting Systems (standard runway barrier configurations)	54
Table 8.2.	(Added-AVIANOAB) Standard Terminology	57
8.2.	If applicable, include procedures for the following in the appropriate section above:	80
8.3.	Instructions.	80
Attachment 1—	GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION	81
Attachment 1—(AVIANOAB)	GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION	86
Attachment 2—	CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND HIGH YIELD EXPLOSIVE (CBRNE) OPERATIONS (T-1)	91
Attachment 3—	FLIGHT BRIEFING GUIDES	93
Attachment 4—	CRITICAL ACTION PROCEDURES (CAPS)	99
Attachment 5—(Added-AVIANOAB)	AVIANO AIRFIELD DIAGRAM	101
Attachment 6—(Added-AVIANOAB)	ARM / DE-ARM AREAS	102
Attachment 7—(Added-AVIANOAB)	AVIANO RAPCON AIRSPACE	103
Attachment 8—(Added-AVIANOAB)	RWY 05 DEPARTURE PROCEDURES & NOISE ABATEMENT	104
Attachment 9—(Added-AVIANOAB)	RWY 05 ARRIVAL/PATTERN	105

Attachment 10—(Added-AVIANOAB) RWY 23 DEPARTURE/ARRIVAL/PATTERN	106
Attachment 11—(Added-AVIANOAB) GRAPPA RECOVERY	107
Attachment 12—(Added-AVIANOAB) SFO PATTERN	108
Attachment 13—(Added-AVIANOAB) LOCAL AIRSPACE SUMMARY	109
Attachment 14—(Added-AVIANOAB) 31 OG SONIC BOOM PROCEDURES	110
Attachment 15—(Added-AVIANOAB) ITALIAN SUPERSONIC FLIGHT REPORT	113
Attachment 16—(Added-AVIANOAB) SONIC BOOM LOG	115
Attachment 17—(Added-AVIANOAB) 31 FW LOW-LEVEL PROCEDURES	116
Attachment 18—(Added-AVIANOAB) AVIANO STEREO ROUTE FLIGHT PLANS	120
Attachment 19—(Added-AVIANOAB) CONTROLLED EJECTION / JETTISON AREAS	121

Chapter 1

GENERAL GUIDANCE

1.1. Responsibilities. This instruction prescribes procedures for operating F-16 aircraft under most circumstances. It is not a substitute for sound judgment. Procedures not specifically addressed may be accomplished if they enhance safe and effective mission accomplishment.

Chapter 2

MISSION PLANNING

Section 2A—General

2.1. Responsibilities. The responsibility for mission planning is shared jointly by all flight members and the operations and intelligence functions of fighter organizations. Accomplish sufficient flight planning to ensure safe mission execution, to include fuel requirements, map preparation, and takeoff/landing data. **(T-1).**

2.2. Bird/Wildlife Aircraft Strike Hazard (BASH) Programs. Bird Watch Conditions are defined in AFI 91-202, *The US Air Force Mishap Prevention Program*, and AFPAM 91-212, *Bird/Wildlife Aircraft Strike Hazard (BASH) Management Techniques*. The OG/CC will determine local BASH procedures. **(T-1).**

2.2.1. Takeoffs, landings, or low-levels within one hour of either sunrise or sunset during the phase II period increase likelihood of birdstrike. Significant bird hazards are published in FLIP GP, the IFR Supplement and local airfield guidance.

2.2.2. When operating at airfields where no BASH program exists, pilots will make appropriate decisions based on observable bird conditions and seek assistance from local airfield personnel. **(T-1).**

2.2.3. Pilots will consider bird migratory patterns during enroute portion of the mission to minimize the potential of an in-flight bird strike. The Bird Avoidance Model (BAM) on United States Avian Hazard Advisory System (<http://www.usahas.com>) provides BASH information, including regionalized CONUS bird migration, PFPS software overlay, and latest news. See AFPAM 91-212 for additional information. **(T-1).**

2.3. Standards. The OG/CC may publish and approve group or wing standards. Operations Group Stan/Eval (OGV) will review all standards for AFI 11-series compliance prior to publication. **(T-1).**

2.4. CBRNE. Procedures for operation in a CBRNE-threat environment are contained in [Attachment 2](#).

2.5. Flight Material Preparation.

2.5.1. Mission Data Card (MDC). The minimum TOLD requirements on the MDC are: 2,000 foot acceleration check speed (if computed takeoff roll exceeds 2,500 feet); refusal speed (dry/wet); rotation speed; takeoff speed; takeoff distance; normal landing speed and distance (dry/wet); heavyweight (immediately after takeoff) landing speed and distance (dry/wet). If computed takeoff roll is less than 2,500 feet, evaluate aircraft performance by comparing actual takeoff distance to computed takeoff distance or use a 1000 foot acceleration check speed. **(T-1).**

2.5.2. Local Area Maps. A local area map is not required if pilot aids include jettison areas, divert information, controlled bailout areas, and provide sufficient detail of the local area to remain within assigned training areas. **(T-1).**

2.5.3. Enroute Charts. Pilots may substitute FLIP enroute charts for maps on navigational flights within areas adequately covered by these charts.

2.5.4. Low Altitude Maps.

2.5.4.1. On low altitude flights, each pilot will carry a current map (updated using Chart Update Manual or electronic equivalent) of the route/operating area. It will be of such scale and quality that the detail of terrain features, hazards, and chart annotations permits navigation and safe mission accomplishment. Circle/highlight manmade obstacles at above planned flight altitude within 5nm of the planned route. Annotate time or distance tick marks and headings. **(T-1).**

2.5.4.2. Annotate route abort altitude (RAA) using the IFR Off Airways guidance in AFI 11-202V3 chapter 8. **(T-1).**

2.5.4.3. For flights inside the Continental United states (CONUS) under Visual Flight Rules (VFR) or inside Military Training Routes (MTR), comply with the following:

2.5.4.3.1. Use FLIP AP/1B and either sectional aeronautical charts or mission planning software (e.g. PFPS/Falcon View/JMPS). Select the following overlay options for PFPS/Falcon View: airports/heliports, airspace boundaries, airways, MTR, parachute jump and special use airspace boundaries. **(T-1).**

2.5.4.3.2. Annotate Low level charts, or locally developed low-level route books , with location and dimensions of class B/C/D airspace, military airfields, civil airfields, and other potential high density traffic areas (e.g., parachute activity areas and ultra light/hang glider/glider sites) within 5 NM of any planned VFR route or MTR lateral boundary. Annotate airfield approach control frequencies in the vicinity of class B/C/D airspace as well as the intersection of other VR/IR routes or other areas of conflict. **(T-1).**

2.5.4.4. Outside the CONUS, follow gaining MAJCOM, theater, or host nation guidance on mission planning. If no such guidance exists, use the best charts or flight planning software overlay options available to accomplish the intent of maximizing traffic awareness and awareness of controlled airspace boundaries. **(T-1).**

2.5.5. Digital Terrain System (DTS) and Automatic Ground Collision Avoidance System (AGCAS). F-16 mission planners will ensure RDTED coverage is adequate for the mission area and is loaded to each flight member's ADTC to ensure maximum AGCAS protection. Without appropriate RDTED coverage, or when corrupted data is present, AGCAS will still provide recovery protection to 50 feet MSL, however this may not prevent potential ground collision when MSL elevation is higher. **(T-1).**

2.5.6. All qualified crewmembers will carry current checklists on every flight. **(T-1).**

2.6. Fuel Conservation. Manage aviation fuel as a limited commodity and precious resource. Design procedures for optimal fuel use and efficiencies throughout all phases of mission execution, to include ground operations, flight plans, power settings and climb/descent profiles. Incorporate enroute tasks to make maximum use of airborne learning opportunities. **(T-1).**

2.7. Overwater. Planned flights over water, outside of the local training area (e.g., deployments, cross countries, Programmed Delivery for Maintenance (PDM) inputs, etc) will be

accomplished two-ship as a minimum. **(T-1)**. Single ship over water flights, outside of the local training area, require OG/CC approval. **(T-3)**. For deployments under ACC/AOS movement control, AFI 11-207 waiver authorities will apply.

2.8. Briefing and Debriefing.

2.8.1. All flight members will attend the briefing unless previously coordinated with unit/squadron supervisors. Flight leads are responsible for presenting a logical briefing to promote a safe and effective mission. Structure flight briefings to accommodate the capabilities of each pilot in the flight. Any item published in CAF/wing/group/squadron standards or AFIs and understood by all participants may be briefed as "standard." **(T-1)**.

2.8.2. Flight leads must plan adequate time to discuss required briefing items depending on complexity of the mission and pilot capabilities, and must start flight briefings at least 1.5 hours before scheduled takeoff. Alert briefings will start in sufficient time to be completed prior to pilot changeover. Items may be briefed in any sequence, provided all minimum requirements listed in this AFI and AFI 11-202V3 are addressed. Additional time and CRM emphasis is required in D-model sorties especially on FAM and Incentive flights. Passenger must demonstrate oxygen regulator use, ability to establish multiple airways and mask removal after being strapped in. **(T-1)**. Reference [Attachment 3](#) for example briefing guides. All flight briefings will include:

2.8.2.1. Weather and NOTAMs **(T-1)**.

2.8.2.2. Emergency procedures **(T-1)**.

2.8.2.3. Mission priorities and task management. **(T-1)**.

2.8.2.4. Significant rules (e.g. SPINS, Training Rules, ROE). **(T-1)**.

2.8.2.5. Flight member responsibilities and deconfliction contracts. Flight leads will brief a formation deconfliction/blind/get well plan for every phase of flight. **(T-1)**.

2.8.3. Low-level Briefings will emphasize **(T-1)**:

2.8.3.1. Obstacle/terrain acquisition and avoidance, bird hazards, emergency actions and weather avoidance with route abort procedures. **(T-1)**.

2.8.3.2. Employment of all Collision Avoidance Advisories and Digital Terrain System warnings to include AGCAS. **(T-1)**.

2.8.3.3. Human factors to include task prioritization, g-excess illusion, and perceptual issues associated with flight over water/featureless terrain. **(T-1)**.

2.8.3.4. Airfield approach control frequencies in the vicinity of class B/C/D airspace as well as the intersection of other VR/IR routes or other areas of conflict. **(T-1)**.

2.8.4. Dissimilar Formation Briefing. Emphasize proper position to ensure wingtip clearance, flight member responsibilities, and aircraft-unique requirements for each phase of flight. **(T-1)**.

2.8.5. Alternate Mission/Events and Multiple Go Days. **(T-1)**.

2.8.5.1. Brief an alternate mission for each flight that is less complex than the primary mission. Unbriefed missions/events will not be flown. Mission elements may be

modified and briefed airborne as long as flight safety is not compromised. Flight leads will ensure changes are acknowledged by all flight members. Continuation training (CT) missions may fly primary or alternate missions in any sequence. **(T-1).**

2.8.5.2. During deployed operations, exercises, or multiple-go days when aircraft turn times do not allow follow-on mission brief(s), if all flight members attend an initial flight brief, the flight lead need only brief any changes for subsequent flights. **(T-1).**

2.8.5.3. On multiple-go days, subsequent missions will be of equal or less complexity. Schedule and plan upgrade events on the first sortie only. If that sortie is non-effective for weather, maintenance or airspace, IPs may elect to accomplish the planned upgrade events in the second sortie. **(T-1).**

2.8.6. Debriefing.

2.8.6.1. All missions will be debriefed and address in-flight execution, flight member responsibilities, deconfliction contracts, tactical employment priorities, and sensor management. **(T-1).**

2.8.6.2. Flight leads will review the video/audio record of all tactical portions of the sortie to assess flight members' AGSM effectiveness. **(T-1).** It is imperative to evaluate not only during the G-ex, but also after the pilot has had time to fatigue--typically when the AGSM breaks down and G-induced Loss of Consciousness (GLOC) occurs. Pilots with poor AGSM technique or low G-tolerance will be identified to the operations officer. **(T-1).** The squadron commander has the option of directing refresher centrifuge training in accordance with AFI 11-404, *Centrifuge Training for High-G Aircrew*.

2.9. Unit Developed Checklists/Local Pilot Aids. Unit developed checklists used in lieu of flight manual checklists must contain all items, verbatim and in order, unless specifically addressed in the flight manual. **(T-1).** Pilot aids will contain:

2.9.1. Briefing guides (reference [Attachment 3](#) for examples). **(T-1).**

2.9.2. Local radio channelization. **(T-1).**

2.9.3. Appropriate airfield diagrams, to include cable/net barrier information. **(T-1).**

2.9.4. Emergency information (impoundment procedures, emergency action checklists, NORDO procedures, divert information, search and rescue procedures, etc). **(T-1).**

2.9.5. Divert base cable and barrier information. **(T-1).**

2.9.6. Bailout and jettison areas. **(T-1).**

2.9.7. Cross-country procedures to include: command and control, engine documentation, Joint Oil Analysis Program (JOAP) samples, and aircraft servicing. **(T-1).**

2.9.8. Other information as desired such as: stereo flight plans, turn procedures, local training areas, instrument preflight, and alert setup procedures.

Section 2B—Night (see also night of Chapter 3, [Chapter 5](#) and [Chapter 6](#))

2.10. Minimum Safe Altitude (MSA). Compute the MSA for each leg of the intended route of flight in accordance with AFI 11-214. **(T-1).**

2.11. Night chart requirements. Minimum requirement is a Form 70 or chart/map containing headings, RAAs, MSAs, and maximum/minimum route structure altitudes. **(T-1).**

Chapter 3

NORMAL OPERATING PROCEDURES

Section 3A—Ground Operations

3.1. Preflight.

- 3.1.1. [B/D model aircraft] when the rear cockpit is occupied by other than a fully qualified F-16 pilot, place the stick control switch in the FWD position. **(T-1).**
- 3.1.2. Do not carry baggage/equipment in an unoccupied rear cockpit; in the avionics bay behind the cockpit; or in the aft canopy fixed transparency area (turtle back). **(T-1).**
- 3.1.3. Do not place objects in or on top of the engine intake. **(T-1).**
- 3.1.4. Secure publications, maps and personal items to avoid flight control/ throttle interference. **(T-1).**
- 3.1.5. Select Pressure Breathing (PBG) except when using Aircrew Eye and Respiratory Protection System (AERPS) or Aircrew Chemical Defense Equipment (ACDE). **(T-1).**
- 3.1.6. If flying with the COMBAT EDGE vest, remove the port plug on the CRU-94/120 (if installed), stow the plug during flight to prevent a FOD hazard, then re-install upon completion of the sortie. **(T-1).**
- 3.1.7. Ensure ejection seat survival kit deployment switch is in the automatic position. **(T-1).**
- 3.1.8. Do not select CAT I on the Stores Configuration Switch with Category III configurations IAW T.O. 1F-16-1-2. **(T-1).**

3.2. Ground Visual Signals. Normally, pilot and ground crew will communicate by the intercom system during all start-engine, pre-taxi and end of runway (EOR) checks. Use the intercom system to the maximum extent possible anytime maintenance technicians are performing "redballs" on the aircraft and for EPU checks performed in congested areas. **(T-1).** Do not actuate any system which endangers ground crew prior to receiving acknowledgment. Units with an active air defense commitment may waive use of ground intercom during alert scrambles. **(T-1).** When ground intercom is not used, visual signals will be in accordance with AFI 11-218, *Aircraft Operation and Movement on the Ground*, and this volume. **(T-1).** The crew chief will repeat the given signal when it is safe to operate the system. **(T-1).**

3.2.1. The following signals augment AFI 11-218:

- 3.2.1.1. EPU OPERATIONAL CHECK. Raise two fingers and rotate hand. **(T-1).**
- 3.2.1.2. FLIGHT CONTROLS CLEAR. Raise arm, clench fist, and make a stirring motion. **(T-1).**
- 3.2.1.3. BRAKE CHECK. Hold left or right arm horizontal, open hand and push forward, breaking at the wrist (as in applying rudder pedal pressure with feet). **(T-1).**
- 3.2.1.4. LOSS OF BRAKES WHILE TAXIING. Lower tailhook. **(T-1).**
- 3.2.1.5. GUN ARMAMENT CHECK. Point index finger forward with thumb upward simulating a pistol and shake head (yes or no). **(T-1).**

3.2.1.6. EPU ACTIVATION. Raise hand with palm open and perform shoving motion indicating "stay away." Then cup hands over oxygen mask indicating hydrazine vapors may be present. **(T-1)**.

3.3. Taxi and Arming.

3.3.1. Taxi Interval/Speed. Minimum taxi interval is 150 feet staggered or 300 feet in trail. Spacing may be reduced when holding short of or entering the runway. Unless mission requirements dictate, limit taxi speed to 30 knots, 15 knots over a raised cable, and 10 knots in turns. **(T-1)**.

3.3.2. Ice/Snow Conditions. Do not taxi during ice and/or snow conditions until all portions of the taxi route and runway have been checked for safe conditions. **(T-1)**. When ice and/or snow are present on the taxiway, taxi on the centerline with a minimum of 300 feet spacing. **(T-1)**. Minimum RCR for taxi is 10. **(T-3)**.

3.3.3. Ice FOD Procedures. The following procedures apply when the conditions in T.O. 1F-16-1 indicate engine damage due to icing is possible.

3.3.3.1. If conditions warrant, the Supervisor of Flying (SOF)/Top 3 will have the first flight lead start 5 minutes early to check for inlet ice formation. **(T-1)**.

3.3.3.2. Position ANTI ICE switch to ON prior to engine start. **(T-1)**.

3.3.3.3. An ice FOD monitor must be available to monitor the engine inlet for ice buildup whenever the aircraft is stopped for an extended period of time (i.e. ramp/shelter and EOR). **(T-1)**. Avoid standing water and snow/slush accumulations.

3.3.3.4. Hold in the arming spot with an ice FOD monitor present until cleared for take-off. **(T-1)**.

3.3.3.5. Shutdown immediately if icing is visually detected and notify the SOF/Top 3. **(T-1)**. Make an appropriate entry in the aircraft forms and qualified personnel must accomplish an intake inspection prior to restarting the engine. **(T-1)**.

3.3.4. EPU Check. Do not allow maintenance technicians to approach the aircraft until the EPU check is complete. **(T-1)**. Use intercom or a "thumbs up" signal to indicate when safe. **(T-1)**.

3.4. EOR Inspections and Before Takeoff Checks. Place hands in view of ground personnel while the quick check inspection and/or arming/de-arming are in progress. **(T-1)**. If the intercom system is not used during EOR checks, the pilot will establish and maintain visual contact with the chief and use visual signals. **(T-1)**. EOR inspections will be accomplished immediately prior to takeoff at a designated location, usually near the end of the runway or while departing the chock area (not required for alert scrambles). **(T-1)**. At non-USAF bases, make every attempt to coordinate an EOR inspection with the host maintenance unit. **(T-1)**.

3.4.1. Forward Firing Ordnance. Do not taxi in front of aircraft being armed/de-armed with forward firing ordnance. **(T-1)**.

3.4.2. Flight members will inspect each other for proper configuration and any abnormalities. **(T-1)**.

3.5. Flight Lineup. Consider weather conditions, runway conditions, and runway width. Minimum spacing between separated elements/flights is 500 feet. **(T-1).** Wingmen must maintain wingtip clearance with their element lead. **(T-1).** If runway width permits, lineup with wingtip clearance between all aircraft in the flight. **(T-1).**

Section 3B—Takeoff and Departure

3.6. Takeoff.

3.6.1. Do not takeoff when the RCR is less than 10. **(T-1).**

3.6.2. Pilots will review takeoff data with emphasis on takeoff and abort factors such as short/wet runway, heavy gross weights, cable configurations and abort sequence in formation flights. **(T-1).**

3.6.3. On training missions, do not takeoff if the computed takeoff roll exceeds 80 percent of the available runway single ship or 70 percent for a formation takeoff. **(T-1).**

3.6.4. Ensure a compatible departure end cable is raised for all takeoffs and landings (including remotely operated cables). **(T-3).**

3.6.5. OG/CC may approve intersection takeoffs if operational requirements dictate. **(T-3).**

3.6.6. Make an afterburner takeoff anytime the computed MIL power takeoff roll exceeds 50 percent of the available runway. **(T-1).**

3.6.7. Centerline Stores. Start the takeoff roll beyond a raised approach end cable unless runway length, runway conditions (wet/icy), winds, gross weight or cable availability dictate otherwise. **(T-1).** Exception: aircraft with a centerline fuel tank may takeoff across approach end BAK-12 arrestment cables with an 8-point tie down system.

3.6.8. Minimum takeoff interval between aircraft/elements is 10 seconds (15 seconds for afterburner). **(T-1).** Increase interval to 20 seconds minimum for join-up on top or when carrying live air-to-surface ordnance (excluding BDU-33s and 20mm ammunition). **(T-1).**

3.6.9. After releasing brakes, aircraft/elements will steer toward the center of the runway. **(T-1).**

3.6.10. Formation Takeoff.

3.6.10.1. Formation takeoffs are restricted to two aircraft. **(T-1).**

3.6.10.2. Do not make formation takeoffs when:

3.6.10.2.1. Runway width is less than 125 feet. **(T-1).**

3.6.10.2.2. Standing water, ice, slush or snow is on the runway. **(T-1).**

3.6.10.2.3. The crosswind or gust component exceeds 15 knots. **(T-1).**

3.6.10.2.4. Loaded with live munitions (excluding air-to-air missiles, BDU-33s, 20mm ammunition, 2.75 rockets, AGM-88, AGM-65, and night illumination flares). **(T-1).**

3.6.10.2.5. Ferrying aircraft from contractor/AFMC facilities. **(T-1).**

3.6.10.2.6. Asymmetric loading or a difference of more than 2,500 pounds gross weight. (T-1).

3.7. Initial Join-up and Rejoins.

3.7.1. Day weather minimums for VFR join-ups below a ceiling are 1,500 foot ceiling and 3 miles (5 km) visibility. (T-1).

3.7.2. Flight leads will maintain 350 KIAS until join-up is accomplished unless mission requirements necessitate a different airspeed. (T-1). Pilots may delay AB cancellation to establish closure on lead or lead element. OG/CCs may approve different climb and cruise airspeeds within dash one limits. (T-3).

3.7.3. Battle damage/bomb check will be accomplished on RTB, when practical (i.e., weather prohibits accomplishing BD check). This check is mandatory after expending any ordnance (including 20mm ammunition). (T-1).

3.7.4. Accomplish air-to-air systems checks above 10,000 feet MSL when practical. (T-1).

3.7.5. For further join-up procedures, see Night Operational Procedures ([Section 3E](#)) and Instrument Procedures ([Chapter 4](#)).

Section 3C—Enroute

3.8. Air Refueling.

3.8.1. Pilots undergoing initial or recurrency training in air refueling will not refuel with a student boom operator. (T-1). Lead/IP will announce when an upgrade or requal pilot is in the formation and will request a qualified (non-student) boomer. (T-1).

3.8.2. Pilots will inform boom operator when refueling from particular tanker type (e.g., KC-10, KC-135) for the first time. (T-1).

3.8.3. Quick flow procedures are authorized and will be conducted IAW ATP-56B and AFTTP 3-3.F-16. (T-1).

3.9. Aircraft Handling Characteristics (AHC) and Automated Recovery Training Series (ARTS)/Maneuvering Parameters.

3.9.1. The following are the minimum altitudes for the prescribed maneuvers.

3.9.1.1. Confidence Maneuvers/Advanced Handling - 10,000 feet AGL, except dive recovery maneuver (15,000 feet AGL minimum entry altitude). (T-1).

3.9.1.2. Horn Awareness and Recovery Training series (HARTS) numbers 1, 2 and 3 - 10,000 feet AGL. (T-1).

3.9.1.3. HARTS series numbers 4 and 5 - 15,000 feet AGL. (T-1).

3.9.1.4. Aircraft will not descend below 5,000 feet AGL during aerobatic maneuvering. (T-1).

3.9.1.5. HARTS 3 with PARS – 10,000 feet AGL. (T-1).

3.9.1.6. ARTS 2 – 8,000 feet AGL. (T-1).

3.9.1.7. ARTS series number 1, 3, 4, and 5 – 5,000 feet AGL. (T-1).

3.9.2. Avoid flight through wingtip vortices/jet wash. **(T-1)**. If unavoidable, the aircraft should be unloaded immediately to approximately 1 G.

3.9.3. Do not manually extend the trailing edge flaps in an attempt to improve aircraft performance. **(T-1)**. EXCEPTION: Trailing edge flaps may be manually extended during intercepts performed by airspace control alert tasked unit aircraft, or during low/slow (below 5000 feet AGL) VID training, on targets traveling at less than 200 KIAS.

3.9.4. Do not attempt to bypass flight control limiters to improve performance. **(T-1)**. Examples are: transfer fuel to alter center of gravity (CG), manual pitch override (MPO) to gain additional negative G or assaulting two limiters at low airspeed.

3.9.5. The minimum airspeed for all maneuvering is based upon activation of the low speed warning tone. When the low speed warning tone sounds, the pilot will take action to correct the low speed condition. **(T-1)**.

3.9.6. The following is guidance for Horn Awareness and Recovery Training Series (HARTS) (reference AFTTP 3-3.F-16):

3.9.6.1. HARTS maneuvers will be flown in CAT-1 loaded aircraft only. **(T-1)**.

3.9.6.2. In F-16 C/D Block 40-52 aircraft, do not fly HARTS maneuvers 4 and 5 unless in one of the following configurations: Clean (no tanks), or 300 gallon centerline tank. MAU-12s may be carried on stations 3 and 7, and/or AIM-9/AMDs/ACMI/CATM-120s may be carried on stations 1, 2, 8 and/or 9. CATM-120s will be symmetrically loaded if carried. AIM-9/AMD/ACMI can be symmetric or one missile asymmetric. Inlet mounted TGP and/or HTS pods may be carried. **(T-1)**.

3.9.6.3. For all F-16 Blocks, external tanks should be dry to avoid a faster than expected airspeed bleed-off due to excessive weight during the pull up, for all HARTS maneuvers.

3.9.7. The following is guidance for Automated Recovery Training Series (ARTS) for AGCAS/ Pilot Activated Recovery System (PARS) recovery profiles (reference AFTTP3-3.F-16): **(T-1)**.

3.9.7.1. With exception of the HARTS 3 with PARS maneuver, AGCAS/PARS demo maneuvers may be flown in any aircraft configuration unless concern for over-g exists. However, a CAT I loading is preferred to demonstrate the full maneuvering potential of the automated recovery system. Potential for over-g exists if any Nose-low PARS maneuver is performed when the aircraft configuration has a symmetric g-limit of less than 6.2 g CAT I or 5.2 g CAT III.

3.9.7.2. AGCAS recoveries shall not be demonstrated by executing dive maneuvers toward the ground. AGCAS is designed to provide a minimal buffer above the ground during recovery and must not be intentionally activated.

3.10. Formation, General. Flight leads and instructors will ensure contracts, roles and responsibilities of each flight member are established, briefed, executed and debriefed. **(T-1)**. Flight members will immediately notify lead if unable to fulfill basic responsibilities, contracts or other assigned tasks. **(T-1)**. Flight leads will avoid tasking element leads/wingmen beyond their abilities without sacrificing basic responsibilities. **(T-1)**. Reference AFTTP 3-3.F-16 and AFTTP 3-1.F-16.

3.10.1. The flight lead is always responsible for flight actions. **(T-1)**. Wingmen will be prepared to take the lead when directed. **(T-1)**.

3.10.2. In IMC, the maximum flight size in visual formation is four aircraft except when flying in close formation with a tanker. **(T-1)**.

3.10.3. Do not use rolling maneuvers to maintain or regain formation position below 5,000 feet AGL or in airspace where aerobatics are prohibited. **(T-1)**.

3.10.4. Use airborne visual signals in accordance with AFI 11-205, *Aircraft Cockpit and Formation Flight Signals*, or detailed in local procedures. **(T-1)**. Initiate configuration changes for four-ship flights by radio call, when practical. When formation position changes are directed by radio, all wingmen will acknowledge prior to initiating the change. **(T-1)**. A radio call is mandatory when directing position changes at night or under instrument conditions. **(T-1)**.

3.10.5. Flight leads will not break up flights from visual or sensor formations until each pilot has a fix from which to navigate (visual, radar, INS or TACAN). **(T-1)**.

3.10.6. Lead changes.

3.10.6.1. The minimum altitude for changing leads within a formation is 500 feet AGL over land or 1,000 feet AGL over water [see also Night Operational Procedures ([Section 3E](#))]. **(T-1)**.

3.10.6.2. During limited visibility conditions (e.g., night, IMC) initiate lead changes from a stabilized, wings level attitude [see also Night Operational Procedures ([Section 3E](#)) and Instrument Procedures ([Chapter 4](#))]. **(T-1)**.

3.10.6.3. Do not initiate lead changes with the wingman further back than normal fingertip or route position, or greater than 30 degrees back from line abreast. **(T-1)**.

3.11. G-Awareness Exercises (G-Ex) (Reference AFTTP 3-3. F-16 and AFI 11-214).

3.11.1. A G-Ex is required if planned maneuvering will exceed 5G. Accomplish the G-Ex day or night, only in VMC, with a discernible horizon, and only when unaided or NVG-aided visual cues are adequate to safely perform the maneuver. **(T-1)**. If these requirements are not met, omit the G-Ex and reduce mission tasking to limit maneuvering to 5G. **(T-1)**.

3.11.2. Unless performing a syllabus required event (e.g., chase of a G-Ex), flight members will follow AFTTP 3-3.F-16 G-Awareness Exercise Procedures. **(T-1)**. Use on-board systems (e.g. air-to-air TACAN, Radar, data link) to establish separation prior to maneuver execution. **(T-1)**.

3.11.3. Conduct the G-Ex in order of preference listed below to help ensure the airspace is clear from potential traffic conflicts. **(T-1)**. If practical, use ATC to help clear the airspace:

3.11.3.1. Special Use Airspace (e.g., Restricted/Warning areas, Air Traffic Control Assigned Airspace (ATCAA), MOAs and MAJCOM approved large scale exercise/special mission areas).

3.11.3.2. In VFR only above 10,000 feet MSL outside of special use airspace.

3.11.3.3. In VFR only inside the confines of a Military Training Route (MTR).

3.11.3.4. In VFR only below 10,000 feet MSL outside of special use airspace.

3.11.4. Flight/element leads flying outside of CONUS will follow gaining MAJCOM, theater or host nation guidance on airspace in which G-Ex may be performed. **(T-1)**. If no such guidance exists, follow the above procedures to the maximum practical extent.

3.12. Tactical Formations.

3.12.1. Tactical Maneuvering. Wingmen/elements must maneuver relative to the flight lead/lead element and they must maintain sight. **(T-1)**. Trailing aircraft/elements are responsible for deconflicting with lead aircraft/elements and will do so vertically when required. **(T-1)**. At low altitude, wingmen/trailing elements will deconflict high. **(T-1)**. Trailing aircraft/element(s) will maintain sufficient spacing so that primary emphasis during formation maneuvering/turns is on low altitude awareness and deconfliction within elements, not on deconfliction between elements. **(T-1)**. Normally, the wingman is responsible for flight path deconfliction, but the flight/element lead becomes primarily responsible when: **(T-1)**.

3.12.1.1. Tactical maneuvering places the leader well aft of the wingman's 3/9 line or forces the wingman's primary attention away from the leader (e.g., wingman becomes engaged fighter).

3.12.1.2. The wingman calls "padlocked".

3.12.1.3. The wingman calls "blind". Primary deconfliction responsibility transfers back to the wingman once the wingman acknowledges a visual on his lead.

3.12.2. Loss of Visual ("Blind") Procedures.

3.12.2.1. Flight members will call blind with an altitude to the hundreds of feet, i.e., "Blind 16.9". **(T-1)**. The visual flight member will respond with "visual" and talk eyes on. **(T-1)**.

3.12.2.2. If the other flight member is also "Blind," they will call blind with an altitude. **(T-1)**. Lead will be directive to ensure altitude separation is maintained and direct the wingman's flow direction. **(T-1)**. Use a minimum of 500 feet (1,000 feet above 5,000 feet AGL) altitude separation. Avoid climbs/descents through the deconfliction altitude. All flight members must visually clear their flight path. **(T-1)**.

3.12.2.3. If there is no timely acknowledgment of the original "Blind 16.9" call, then the flight member/element initiating the call will maneuver away from the last known position of the other flight member/element and climb/descend if necessary. **(T-1)**. If visual contact is still not regained, the flight lead will take additional positive action to ensure flight path deconfliction. **(T-1)**. Scenario restrictions such as sanctuary altitudes and/or adversary blocks must be considered.

3.12.3. Sensor formations. If SA is lost or "Blind" in a sensor formation, call "Blind" with altitude and follow the above procedures. **(T-1)**. Wingmen will strive to maintain an altitude stack at all times in sensor formation. **(T-1)**.

3.13. Chase Formation.

3.13.1. Restrictions. Any pilot may fly safety chase for aircraft under emergency or impending emergency conditions. All chase events may be flown by IP/Flight Examiners

(FEs) or upgrading IPs under the supervision of an IP. Qualified pilots, including Initial Qualification Training (IQT)/Mission Qualification Training (MQT) pilots who have successfully completed an Instrument/Qualification evaluation) may chase as safety observer for aircraft performing simulated instrument flight or hung ordnance patterns. Specialized missions (i.e., OT&E, Weapon System Evaluation Program (WSEP), live weapons delivery, etc) and training conducted IAW AFI 11-2F-16V1, *F-16--Aircraft Training*, may be chased by Combat Mission Ready (CMR)/Basic Mission Capable (BMC) pilots designated by group/squadron commanders.

3.13.2. Procedures.

3.13.2.1. On transition sorties, the chase aircraft will perform a single-ship takeoff. In-flight, the chase aircraft will maneuver as necessary, but must maintain nose-tail separation. The chase will not stack lower than lead aircraft below 1,000 feet AGL. In the traffic pattern, the chase aircraft may maneuver as necessary to observe performance. **(T-1).**

3.13.2.2. A safety observer in chase will maneuver in a 30-60 degree cone with nose/tail clearance out to a range of 1 NM, from which he can effectively clear and/or provide assistance. **(T-1).**

3.13.2.3. For live ordnance missions, the chase pilot is responsible for ensuring frag deconfliction is maintained for his aircraft. **(T-1).**

3.14. Show Formation. Such formations will be specifically briefed and flown IAW applicable directives. Refer to AFI 11-209, *Aerial Event Policy & Procedures*, and applicable MAJCOM or ANG directives for specific rules and appropriate approval levels to participate in static displays and aerial events. **(T-1).**

3.14.1. AGCAS SHOW mode may be selected only if operating IAW MAJCOM or ANG approved aerial events.

3.15. Low Altitude Operations (reference AFTTP 3-1. F-16 and AFTTP 3-3.F-16).

3.15.1. Airspeed and Altitude. The minimum airspeed for low level navigation is 300 KIAS and the minimum altitude is 1,000 feet AGL (or IAW approved step-down training). For night or IMC operation, the minimum altitude is the MSA (see AFI 11-214) unless operating under NVG LOWAT Procedures. **(T-1).**

3.15.2. At low altitude, the immediate reaction to task saturation, diverted attention, knock-it-off, or emergencies is to climb to a prebriefed safe altitude (minimum 1,000 feet AGL). **(T-1).**

3.15.2.1. When a "PULL-UP-PULL-UP" warning sounds, the pilot will take immediate action to ensure terrain clearance, while referencing the primary flight instruments. **(T-1).**

3.15.2.2. F-16's with pilot-selectable GCAS Minimum Terrain Clearance (MTC) settings will set an altitude that does not result in "PULL-UP" warnings at normal operational altitudes. **(T-1).** Minimum MTC is 50 feet for strafe and visual bombing, and 25% of LOWAT Category minimum altitude for all other operations. Wings with significant tall trees in the operating area or VR routes will account for average tree height when setting MTC altitudes. **(T-1).**

3.15.2.3. F-16's equipped with an operational AGCAS will ensure NORM mode is selected prior to LOWAT operations down to 500'AGL to include HAS and LAS events. **(T-1)**. If operations are required below 500'AGL, AGCAS MIN mode may be selected to prevent nuisance fly-ups. **(T-3)**.

3.15.3. Weather. Consult FLIP for minimum weather on a VR or IR route. For low altitude training outside the CONUS, comply with theater/host nation guidance. **(T-1)**.

3.15.3.1. Deteriorating weather on a VR Route.

3.15.3.1.1. Able to maintain VMC. If it becomes apparent that weather ahead will not permit continued flight on the VR, maintain VMC, slow down, maneuver to exit the route structure, and establish a VFR hemispheric altitude. **(T-0)**.

3.15.3.1.2. Unable to maintain VMC. Climb to briefed deconfliction altitudes (reference Chapter 2). Squawk applicable (IFF/SIF) modes and codes and contact a controlling agency to pick up an IFR clearance if required. Maintain preplanned ground track. **(T-1)**.

3.15.4. Obstacle/Terrain Avoidance. If unable to visually acquire or ensure lateral separation from known vertical obstructions which are a factor to the route of flight, flight leads will immediately direct a climb NLT 3 NM prior to the obstacle to an altitude that ensures vertical separation. **(T-1)**.

3.15.5. At altitudes below 1,000 feet AGL, wingmen will not fly at a lower AGL altitude than lead. **(T-1)**.

3.15.6. When crossing high or hilly terrain, maintain positive G on the aircraft and do not exceed 120 degrees of bank. Maneuvering at less than 1 G is limited to upright bunting maneuvers. **(T-1)**.

Section 3D—Recovery and Landing

3.16. Gear Checks. For a VFR straight in, call gear down no later than 3 NM final. For an instrument approach (reference [Chapter 4](#)), call gear down at the final approach fix or published glide slope intercept point. For an overhead, call gear down departing the perch. For a SFO or FO, call gear down at base key. **(T-1)**.

3.17. Angle of Attack (AOA). Final approach will normally be flown at 11 degrees AOA. Pilots will compare the computed final approach airspeed with AOA. **(T-1)**.

3.18. Landing restrictions. When the computed landing roll exceeds 80 percent of the available runway, land at an alternate if possible. When the RCR at the base of intended landing is less than 10, land at an alternate if possible. Do not land over any raised web barrier (e.g., MA-1A, 61QS11). **(T-1)**.

3.19. Desired touchdown point and spacing.

3.19.1. The desired touchdown point is 500 feet from the aim point. The aim point for a VFR approach is the threshold. The aim point for a precision approach is the glide path interception point. To avoid possible speedbrake or nozzle damage, touch down either past a raised approach-end cable, or 500 feet prior to the cable. With centerline stores, touchdown will normally be past an approach-end cable. Circumstances that may dictate landing prior to

the cable include runway length, wind, runway condition (wet or icy), gross weight or an aircraft malfunction where full normal braking may not be available. Single-ship or formation landings with centerline stores may be made across BAK-12 arrestment cables which have been modified with an 8-point-tie-down system. **(T-1).**

3.19.2. Touchdown spacing behind an aircraft while flying a 13 degree approach will be a minimum of 6,000 feet due to susceptibility of the aircraft to wake turbulence and speedbrake/tail scrapes. Minimum pattern and touchdown spacing between landing aircraft is 3,000 feet for similar aircraft (e.g., F-16 following F-16), 6,000 feet for dissimilar fighter aircraft (e.g., F-16 following F-15) or as directed by MAJCOM or the landing base, whichever is higher. **(T-1).**

3.19.2.1. When wake turbulence is expected due to calm winds or when landing with a light tail wind, spacing will be increased to 6,000 feet minimum. **(T-1).** Under these conditions, moderate to severe wake turbulence has been reported out to 7,000 foot touchdown spacing.

3.19.3. All aircraft will land in the center of the runway and clear to the cold side when speed/conditions permit. **(T-1).**

3.20. Low Approaches.

3.20.1. Observe the following minimum altitudes: **(T-1).**

3.20.1.1. IP/FEs flying chase position: 50 feet AGL.

3.20.1.2. Formation low approaches: 100 feet AGL.

3.20.1.3. Chase aircraft during an emergency: 300 feet AGL unless safety or circumstances dictate otherwise.

3.20.2. During go-around, remain 500 feet below VFR overhead traffic pattern altitude until crossing the departure end of the runway unless local procedures, missed approach/climbout procedures or controller instructions dictate otherwise.

3.21. Touch-and-Go Landings. Fly touch-and-go landings IAW AFI 11-202V3. Do not fly them with live or hung external ordnance or with fuel remaining in any external tank. **(T-1).**

3.22. Overhead Traffic Patterns. Unless the OG/CC determines that local conditions (e.g., threat condition, populated areas) dictate otherwise, do not fly overhead patterns with unexpended heavy-weight ordnance (larger than BDU-33). **(T-3).**

3.23. Tactical Overhead Traffic Patterns. Tactical entry to the overhead traffic pattern is permitted if the following conditions are met:

3.23.1. Published overhead pattern altitude and airspeed are used.

3.23.2. Specific procedures have been developed locally and coordinated with appropriate air traffic control agencies.

3.23.3. The flight consists of a maximum of four aircraft (aircraft/elements more than 6,000 feet in trail will be considered a separate flight).

3.23.4. No aircraft offset from the runway in the direction of the break (the intent is to avoid requiring a tighter than normal turn to arrive on normal downwind).

3.23.5. Normal downwind, base turn positions, and spacing are flown.

3.24. Closed Traffic Patterns. Initiate the pattern at the departure end of the runway unless directed/cleared otherwise by local procedures or the controlling agency. An element low approach may be followed by a sequential closed with controller approval. Plan to arrive on downwind at 200-250 KIAS.

3.25. Back Seat Approaches and Landings.

3.25.1. An upgrading IP may only accomplish back seat landings when an IP is in the front cockpit. **(T-1).**

3.25.2. During back seat approaches and landings, the front seat pilot will visually clear the area, monitor aircraft parameters/configurations and be prepared to direct a go-around or take control of the aircraft (as briefed by the rear cockpit IP) if necessary. **(T-1).**

3.26. Formation Approaches and Landings.

3.26.1. Aircraft must be symmetrically loaded. **(T-1).** Consider symmetrical as those stores loadings which do not require an abnormal trim or control application to counter a heavy wing or yaw during takeoff and acceleration to climb airspeed.

3.26.2. Elements will be led by a qualified flight lead unless an IP or flight lead qualified squadron supervisor is in the element. **(T-1).**

3.26.3. Use a rate of descent similar to a precision approach. Fly a published precision instrument approach if one is available. If not, fly a non-precision approach or VFR straight in and reference available lighting systems (e.g., VASI, PAPI) for descent angle. **(T-1).**

3.26.4. If the crosswind exceeds 5 knots, lead will position the wingman on the upwind side. **(T-1).**

3.26.5. The wingman will maintain a minimum of 10 feet lateral wingtip spacing. If the wingman overruns lead after landing, accept the overrun and maintain the appropriate side of the runway and wingtip clearance. Do not attempt to reposition behind lead. **(T-1).**

3.26.6. Do not make formation landings when: **(T-1).**

3.26.6.1. The crosswind or gust component exceeds 15 knots.

3.26.6.2. The runway is wet or reported wet.

3.26.6.3. There is ice, slush, or snow on the runway.

3.26.6.4. The runway width is less than 125 feet.

3.26.6.5. Arresting gear tape connectors extend onto the runway surface at the approach end of 125 foot wide runways (excluding overrun installations).

3.26.6.6. Landing with hung ordnance or unexpended live bombs.

3.26.6.7. The weather is less than 500 foot ceiling and 1.5 miles visibility (or a flight member's weather category, whichever is higher). This applies to chased approaches and formation low approaches.

Section 3E—Night (see also night of Chapter 2, Chapter 5 and Chapter 6)

3.27. General Night Procedures.

3.27.1. Night Ground Operations. The anti-collision (strobe) light may be OFF and the position lights STEADY if they prove to be a distraction. Taxi spacing will be a minimum of 300 feet and on the taxiway centerline. **(T-1).** The taxi light will normally be used during all night taxiing. **Exception:** When the light might interfere with the vision of the pilot of an aircraft landing or taking off, the taxiing aircraft will come to a stop if the area cannot be visually cleared without the taxi light.

3.27.2. Night Takeoff. Aircraft will maintain the anti-collision light ON and position lights FLASH for takeoffs, unless IMC will be encountered shortly after takeoff. **(T-3).** **Exception:** For formation takeoffs, flight/element leads will turn the anti-collision light OFF and position lights STEADY after reaching the run-up position on the runway. During a night formation takeoff, brake release, gear retraction and AB termination will be called on the radio. **(T-1).** Following takeoff, each aircraft/element will climb on runway heading to 1,000 feet AGL before initiating turns, except where departure instructions specifically preclude compliance. **(T-3).**

3.27.3. Night Join-up. Weather criteria for night join-up underneath a ceiling is 3,000 foot ceiling and 5 miles visibility. **(T-1).** After join-up, the anti-collision light will be OFF and position lights will be STEADY for all except the last aircraft, which will keep the anti-collision light ON and position lights FLASH unless otherwise directed by the flight lead. **(T-3).**

3.27.4. Position/Lead Changes. Unless operating with NVGs, do not change lead or wing positions below 1,500 feet AGL unless on radar downwind. Call such changes over the radio and initiate them from a stabilized, wings-level attitude whenever possible. **(T-1).**

3.27.5. Night Break-up. Prior to a night formation break-up, the flight lead will confirm position and transmit attitude, altitude, airspeed, and altimeter setting. Wingmen will acknowledge and confirm good navigational aids. **(T-1).**

3.27.6. Night Landing. Land from the most precise approach available. Night formation landings will only be performed when required for safe recovery of the aircraft. **(T-1).**

3.28. Night Vision Goggles (NVG) Procedures.

3.28.1. NVG Preflight. NVGs must be preflight tested and adjusted/focused for the individual pilot using (in order of preference) the Hoffman ANV-20/20 Tester, a unit eye lane, or equivalent. **(T-1).** Reference AFI 11-301V1, *Aircrew Flight Equipment (AFE) Program*.

3.28.2. Cockpit Lighting. Fly with NVGs only in aircraft whose cockpit lighting MAJCOM designates as NVG compatible. **(T-2).** MAJCOMs will only make such a designation if all control and performance instruments are sufficiently illuminated by the NVG-compatible lighting so as to make them immediately available to the pilot in the event they need to transition to instruments. **(T-1).**

3.28.3. Weather/Visibility/Illumination Levels/Minimum Altitudes/Discernable Horizon. Reference AFI 11-214, AFTTP 3-3.F-16, and AFI 11-202V3. All pilots conducting NVG

operations that include air-to-air/surface-to-air threat reactions or air-to-ground dynamic/diving deliveries will conduct a “30-Up and 30-Down” horizon orientation maneuver before conducting tactical maneuvering. **(T-1)**. This maneuver will be accomplished in VMC, above the MSA and should be completed after the G-awareness exercise. The purpose is to evaluate horizon conditions and practice an NVG horizon orientation and crosscheck. If airspace precludes the maneuver, pilots operating on NVGs will limit maneuvers to AFI11-214 “Restricted Maneuvering” guidelines. **(T-1)**. Pilots will adhere to the following guidelines when conducting the 30-Up and 30-Down maneuver: **(T-1)**.

3.28.3.1. In VMC conditions (with a discernible horizon), and with sufficient altitude (~3,000-5,000 feet) in approved operating airspace, accelerate to 350 KIAS minimum. Maintain a minimum spacing of 6000 feet between aircraft throughout the maneuver. The flight lead will announce, “Standby 30-UP, 30-Down” and will communicate a reference heading prior to execution for flight deconfliction. Flight members will verify correct spacing, heading, and entry parameters and will communicate “stand by” if not ready.

3.28.3.2. Flight leads will command “30 Up,” and all pilots will execute a military power, 3-4 G wings-level pull up to place the bore cross on the 30 degree pitch ladder. Pilots will evaluate and orient themselves with the horizon in the forward quadrants, both above and below the horizon while maintaining intra-flight deconfliction contracts. Take note of the physical cranial movement required to move the NVG field of regard back to the horizon, as well as the condition of the horizon due to ambient factors. If at any time the airspeed drops below 250 KIAS, weather is encountered, or symptoms of spatial disorientation are recognized, the pilot will immediately transition to primary flight instruments, call a “knock it off (with reason),” and conduct an IMC nose-high recovery.

3.28.3.3. After approximately 5 seconds, or sooner if airspace or altitude restrictions require, the flight lead will command “roll left (or right), 30 down”. All aircraft will roll inverted and accomplish the military power, 3-4 G wings-level pull to place the bore cross at the 30 degree nose-low, then roll upright on the reference heading. Once intra-flight deconfliction is assured, repeat the horizon crosscheck and visibility assessment while maintaining the 30 degree-nose low attitude.

3.28.3.4. If during any portion of the maneuver a flight member determines that the visibility or horizon reference is unsuitable for tactical maneuvering per AFI-11-214 guidance, the flight lead will modify the training profile and either transition to non-NVG formations or NVG formation tactics limited to AFI11-214 “Restricted Maneuvering” guidelines. Continually modify profiles or airspace utilization throughout the sortie if conditions change and no longer permit the planned maneuvering. Flight training modification includes: restricted maneuvering limitations (with or without NVGs) per AFI-11-214, a non-NVG formation IMC game plan, or accomplishing a briefed alternate mission without NVGs.

3.28.3.5. Pilots will continually cross-check visually perceived attitude aided by NVGs with frequent cross-checks of primary flight instruments throughout the mission.

3.28.4. NVG Qualifications. Do not wear NVGs in flight unless the pilot is NVG qualified or there is a qualified NVG IP in the flight (ratio of one NVG IP per non-NVG qualified

pilot). **(T-1)**. F-16B/D Familiarization flights are authorized if appropriate academics are accomplished and an NVG IP is in the front seat. **(T-1)**.

3.28.5. Radio Calls. All flight members will make a radio call when donning, raising, or stowing NVGs. **(T-1)**.

3.28.6. Obstacle/Intra-Flight Deconfliction. When flying in route, only one flight member per element will don/raise/stow NVGs at a time. Flight leads will call turns if forced to maneuver while flight members are donning/raising/stowing NVGs. **(T-1)**.

3.28.7. Takeoffs/Landings. NVGs will be stowed or raised during takeoff until at or above 2,000 feet AGL in climbing or level flight and only in VMC. Stow or raise NVGs no later than 5 minutes prior to landing unless NVGs are required to handle an emergency or mission requirements dictate. **(T-1)**.

3.28.8. NVG Use during Air to Air Refueling (AAR). Stow or raise NVGs no later than the stern position and resume NVG use no earlier than boom disconnect. **(T-1)**.

Section 3F—Other

3.29. Targeting Pod Operations. Do not use the TGP for anything other than navigational SA below 1,000 feet AGL (e.g., Only VID aircraft, designate for weapons delivery, etc. above 1,000 feet AGL). **(T-1)**. (USAFWC, Test, and AATC: Minimum altitudes for TGP operations are established in WIC or test syllabus requirements, continuation training plans or operational test and evaluation requirements).

3.30. Radio Procedures. Preface all communications with the complete flight call sign (except for wingman acknowledgment). Transmit only that information essential for mission accomplishment or safety of flight. **(T-1)**.

3.30.1. Radio Checks. Acknowledge radio checks, which do not require the transmission of specific data by individual flight members, in turn (EXAMPLE: "2, 3, 4"). Acknowledgment indicates the appropriate action is either complete, is in the process of being completed or is understood by the flight member. **(T-1)**.

3.30.2. Clearance Acknowledgement. All flight members will acknowledge understanding the initial air traffic control (ATC) clearance. If flight members are not monitoring in-flight ATC frequency, the flight lead will pass all ATC instructions to the flight. Flight members will acknowledge subsequent ATC instructions when directed by the flight lead. **(T-1)**.

3.30.3. Brevity code and other terminology will be IAW AFI 11-214 and AFTTP 3-1. General Planning, *General Planning and Employment Considerations*. **(T-1)**.

3.30.4. Ops Checks.

3.30.4.1. Monitor the fuel system carefully to identify low fuel, trapped fuel or an out of balance situation as soon as possible. Frequency should be increased during tactical maneuvering at high power settings. Ops checks are required: **(T-1)**.

3.30.4.1.1. During climb or at level-off after takeoff.

3.30.4.1.2. When external fuel tanks (if carried) are empty.

3.30.4.1.3. Prior to each (D)ACBT engagement or intercept.

3.30.4.1.4. Prior to entering an air-to-surface range, once while on the range if multiple passes are made and after departing the range.

3.30.4.2. Minimum items to check are engine instruments, total and internal fuel quantities/balance, G-suit connection, oxygen system and cabin altitude. If the G-suit malfunctions or becomes disconnected, terminate all ACBT maneuvering until normal operation is reestablished. **(T-1)**.

3.30.4.3. For formation flights, the flight lead will initiate ops checks by radio call or visual signal. Response will be made by radio call or visual signal. **(T-1)**.

3.30.4.3.1. During Ops checks, ensure the fuel quantity selector knob is returned to the NORM position. **(T-1)**. Totalizer-only Ops checks may be used periodically during high demand phases of flight.

3.30.4.3.2. For mandatory ops checks when external tanks are carried, each flight member will check the external tank(s) and add "Tank(s) feeding/dry" to the Ops Check. **(T-1)**. Once the tank(s) have been confirmed and called dry, this may be omitted from subsequent ops checks.

3.30.4.3.3. Do not substitute data-linked fuel status for operations checks. **(T-1)**.

3.31. Lap Belts. Use extreme caution when disconnecting the lap belt in flight due to potential for lap belt buckle/side-stick controller/throttle interference.

3.32. Change of Aircraft Control. Both pilots of an F-16B/D must know at all times who has control of the aircraft. Transfer of aircraft control will be made with the statement "You have the aircraft." The pilot receiving control of the aircraft will acknowledge "I have the aircraft." Once assuming control of the aircraft, maintain control until relinquishing it as stated above. **(T-1)**. **Exception:** If the intercom fails, the pilot in the front cockpit (if not in control of the aircraft) will rock the wings and assume control of the aircraft, radios and navigational equipment unless briefed otherwise. **(T-3)**.

3.33. Fuel Requirements. (T-1).

3.33.1. Joker Fuel. A briefed fuel quantity needed to terminate an event and proceed with the remainder of the mission.

3.33.2. Bingo Fuel. A briefed fuel state which allows the aircraft to return to the base of intended landing or alternate, if required, using preplanned recovery parameters and arriving with normal recovery fuel as listed below:

3.33.3. Normal Recovery Fuel. The fuel quantity on initial or at the FAF at the base of intended landing or alternate, if required. This fuel quantity will be the higher of what is established locally or:

3.33.3.1. All F-16 Blocks 10 through 32 - 1,000 pounds.

3.33.3.2. All F-16 Blocks 40 and higher - 1,200 pounds.

3.33.4. Minimum/Emergency Fuel. Declare the following when it becomes apparent that an aircraft will enter initial or start an instrument final approach at the base of intended landing or alternate, if required, with:

3.33.4.1. Minimum Fuel:

3.33.4.1.1. All F-16 Blocks 10 through 32 - 800 pounds or less.

3.33.4.1.2. All F-16 Blocks 40 and higher - 1,000 pounds or less.

3.33.4.2. Emergency Fuel:

3.33.4.2.1. All F-16 Blocks 10 through 32 - 600 pounds or less.

3.33.4.2.2. All F-16 Blocks 40 and higher - 800 pounds or less.

3.33.5. Afterburner Use. Do not use AB below 2,000 pounds total fuel or established bingo fuel, whichever is higher, unless required for safety of flight.

3.34. Radar Altimeters and Terrain Warning/Avoidance Systems.

3.34.1. If the aircraft is equipped with such systems (CARA, DTS, PGCAS, AGCAS, etc.), turn them on for all flights. Set LIS altitude advisory as appropriate on all missions. PGCAS will be enabled with a minimum altitude setting of 200 feet for day operations and 700 feet for night operations. AGCAS mode (NORM/MIN/SHOW) will be set per mission requirements and confirmed mode selected. AGCAS should only be turned off if a known system malfunction affecting safety of flight requires system deactivation. Pilots will ensure that the appropriate values are set prior to takeoff. For low altitude operations GCAS settings, reference 3.15.2.2 this publication. **(T-1).**

3.35. ALOW Setting. Set the ALOW function of the radar altimeter at the briefed minimum altitude, the command-directed minimum altitude, or as briefed, whichever is highest. **(T-1).**

3.36. Wind and Sea State Restrictions. Do not conduct training missions when surface winds along the intended route of flight exceed 35 knots steady state. Do not conduct over water training missions when surface winds exceed 25 knots steady state or when the sea state exceeds 10 feet (or 4 meters-USAFA). **(T-1).** This is not intended to restrict operations when only a small portion of the route is affected. **(T-3).** The OG/CC or equivalent is the waiver authority.

3.37. Airborne Interrogator Friend Foe (AIFF) Operation. (T-1).

3.37.1. To reduce the potential for adverse effects on Combat Identification, Air Traffic Control, and Traffic Collision Avoidance systems, pilots will limit interrogations to the minimum required for the mission.

3.37.2. For AIFF operations within the United States and its Possessions (US&P), pilots will comply with the equipment and operational restrictions as specified in the applicable Radio Frequency Authorizations (RFA's) which can be obtained from the unit spectrum management office.

Chapter 4

INSTRUMENT PROCEDURES

4.1. General.

4.1.1. Head-Up Display (HUD) Use. Regardless of Block, do not use the HUD to recover from an unusual attitude or while executing lost wingman procedures except when no other reference is available. The HUD in F-16 Block 25/30/32 aircraft and Block 40/42/50/52 aircraft has been certified as a primary flight instrument and may be used as a primary flight reference in night/IMC conditions. The HUD in all other F-16 Blocks may be used as an additional instrument reference only. No F-16 Block may use the HUD as the sole reference in night/IMC conditions. **(T-1).**

4.1.2. INS/GPS or EGI Use. The F-16 INS/GPS and EGI are approved for enroute Area Navigation (RNAV). Neither RNAV nor GPS approaches are authorized.

4.1.3. Simulated Instrument Flight. Simulated instrument flight requires a qualified safety observer in the aircraft or in a chase aircraft. The observer may occupy either seat of the F-16B/D provided the intercom is operable. Use the radar to aid in clearing the area. Pilots in F-16A/C aircraft may not log simulated instrument flight without a chase. They may fly multiple approaches in VMC without a chase, but will place their primary emphasis on seeing and avoiding other aircraft. Chase aircraft may move into close formation on final for a formation landing provided simulated instrument flight is terminated. **(T-1).**

4.2. Takeoff and Initial Join-up.

4.2.1. If weather is below 1,500 foot ceiling and 3 miles (5 km), each aircraft and element will climb on takeoff heading to 1,000 feet AGL before initiating any turns, except when departure instructions specifically preclude compliance. **(T-1).**

4.3. Trail Procedures.

4.3.1. General. During trail formations, basic instrument flying is the first priority and will not be sacrificed when performing secondary trail tasks. Strictly adhere to the briefed airspeeds, power settings, altitudes, headings and turn points. If task saturation occurs, cease attempts to maintain radar contact, immediately concentrate on flying the instrument procedure, then notify the flight lead. The flight lead will notify ATC. **(T-1).**

4.3.1.1. Flight leaders will request non-standard formation from ATC. **(T-1).**

4.3.1.2. ATC instructions issued to the lead aircraft apply to the entire flight.

4.3.1.3. Normal spacing is 2-3 NM.

4.3.1.4. Each aircraft and element will follow the No Radar/Sensor Contact procedures until the aircraft or element immediately in trail has radar/sensor contact and called "tied." **(T-1).**

4.3.2. No Radar/Sensor Contact. **(T-1).**

4.3.2.1. The flight leader will call initiating all turns. Subsequent aircraft must delay turns to maintain the desired spacing.

4.3.2.2. Each aircraft and element will maintain 20 seconds or 2-3 NM spacing using all available aircraft systems and navigational aids to monitor position.

4.3.2.3. During climbs and descents, each aircraft or element will call passing each 5,000 foot altitude increment with altitude and heading (or heading passing) until join-up, level-off, or the following aircraft or element calls "tied."

4.3.2.4. Each aircraft and element will call initiating any altitude or heading change. Acknowledgments are not required; however, it is imperative that preceding aircraft or elements monitor the radio transmissions and progress of the succeeding aircraft and elements, and immediately correct deviations from the planned route.

4.3.2.5. Each aircraft and element will maintain at least 1,000 feet vertical separation from the preceding aircraft or element until establishing radar or visual contact, except in instances where departure instructions specifically preclude compliance. Reduce vertical separation to 500 feet if necessary to comply with MSA restrictions.

4.3.2.6. In the event a visual join-up cannot be accomplished on top or at level-off, the flight leader will request altitude separation for each succeeding aircraft or element to meet the requirements of the above paragraph.

4.3.3. Radar Contact. (T-1).

4.3.3.1. Each aircraft and element will call "tied" when radar contact is established with the preceding aircraft. Once all aircraft are tied, no further radio calls are required, except to acknowledge ATC instructions, unless radar contact is lost.

4.3.3.2. In flights of three or more aircraft, use all available aircraft systems (i.e., radar, TACAN, AAI, etc.) to ensure that trail is maintained on the correct aircraft.

4.3.4. Trail Departures. (T-1).

4.3.4.1. Use a minimum of 20 seconds takeoff spacing.

4.3.4.2. Each aircraft/element will accelerate in MIL or AB power until reaching 350 KIAS (or as required by local procedures). Upon reaching this speed, the flight leader will set a pre-briefed power setting. Climb at 350 KIAS until reaching cruise Mach/TAS, unless otherwise briefed.

4.3.4.3. Make all turns using 30 degrees of bank.

4.3.5. En Route Trail. Flight leads must brief airspeeds, power settings, and configurations. (T-1).

4.3.6. Trail Recovery. (T-1).

4.3.6.1. Trail recoveries are only authorized at locations where procedures have been established. Appropriate ATC agencies must approve and local operating procedures must address trail recovery procedures. As a minimum, procedures must address each recovery profile, missed approach, climb-out, desired and maximum spacing requirements, lost contact and lost communications.

4.3.6.2. Limit trail recovery to a maximum of four aircraft.

4.3.6.3. Trail recoveries are authorized when weather at the base of intended landing is at or above the highest pilot weather category in the flight or approach minimums, whichever is higher.

4.3.6.4. The flight lead must brief the flight on spacing, configuration and airspeeds.

4.3.6.5. The flight lead must coordinate the trail recovery with ATC prior to taking spacing.

4.3.6.6. Prior to wingmen taking spacing for the trail recovery, the flight lead will ensure that all wingmen have operative navigational aids and radar.

4.3.6.7. Accomplish flight separation IAW local directives and in VMC if possible.

4.3.6.8. The formation must squawk as directed by ATC.

4.3.6.9. ATC will provide radar flight following for the entire formation.

4.3.6.10. Limit all turns to a maximum of 30 degrees of bank.

4.3.6.11. Once established on a segment of a published approach, each aircraft must comply with all published altitudes and restrictions while maintaining in-trail separation.

4.3.6.12. Unless local procedures establish defined reference points for airspeed and configuration changes, the flight lead must direct changes by radio. At flight lead's call all aircraft must simultaneously comply with the directed change.

4.3.6.13. All aircraft must report the final approach fix.

4.3.6.14. If contact is lost with the preceding aircraft, the pilot will transmit "Callsign (C/S) lost contact." The preceding aircraft will respond with altitude, airspeed and heading. Establish altitude deconfliction and coordinate a separate clearance with ATC. If contact is lost while established on a segment of a published approach, flight members may continue the approach, but must confirm separation via navigation aids. If separation cannot be confirmed, execute missed approach or climb-out as instructed by ATC.

4.3.6.15. Flight leads will coordinate with local ATC prior to penetration if the trail recovery will terminate in a Precision Approach Radar (PAR) or Airport Surveillance Radar (ASR) approach.

4.4. Formation Break-up. Formation break-up from a visual formation will occur in VMC. If IMC is unavoidable, breakup from a visual formation will occur in straight and level flight. This restriction does not apply to trail formation. Prior to an IMC break-up, the flight lead will confirm position and transmit attitude, altitude, airspeed, and altimeter setting. Wingmen will acknowledge and confirm good navigational aids (reception of appropriate TACAN, ILS and/or appropriate GPS/INS waypoint). **(T-1).**

4.5. Formation Penetration. (T-1).

4.5.1. Restrict formation penetrations in route or close formation to two aircraft when the weather at the base of intended landing is less than overhead traffic pattern minimums.

4.5.2. If a formation landing is intended, position the wingman on the appropriate wing prior to weather penetration.

4.5.3. Formation penetrations using radar trail procedures are authorized when weather at the base of intended landing is at or above the highest pilot weather category in the flight or approach minimums, whichever is higher.

4.6. Formation Approach. During IMC formation flights, do not change lead or wing positions below 1,500 feet AGL unless on radar downwind or if required during a formation approach with an F-16 experiencing an Emergency. **(T-1).**

4.7. Instrument Approach Procedures. (T-1).

4.7.1. Pilots will not fly any published instrument procedure (e.g. DoD, Jeppesen, ICAO) that requires airspeeds less than those specified in T.O. 1F-16x-1.

4.7.2. The F-16 is Approach Category E. If no Category E minimums are published, Category D minimums can be used, provided:

4.7.2.1. A straight-in approach is flown.

4.7.2.2. For the final approach segment, the aircraft is flown at 165 KIAS or less.

4.7.2.3. For the missed approach segment, the aircraft is flown at 260 knots true airspeed (KTAS) or less. At high density altitudes 260 KTAS may require a KIAS below the speed specified in T.O. 1F-16x-1 and Category D approaches shall not be flown.

Chapter 5

AIR-TO-AIR WEAPONS EMPLOYMENT

5.1. General. Reference AFI 11-214 for procedures and restrictions. In addition, F-16 pilots shall comply with the requirements of this chapter. (T-1).

5.2. Simulated Gun Employment. (T-1).

5.2.1. Never perform simulated gun employment with a hot gun (one that is not safe IAW T.O. 1F-16x-34-1-1). Never perform a trigger check with a hot gun, regardless of Master Arm switch position.

5.2.2. Prior to flight, confirm the status of the gun system. Prior to simulated gun employment, perform a trigger check with the Master Arm switch in SIMULATE and the aircraft pointed away from other aircraft and populated areas. If HUD symbology reads "ARM" or SMS/MFD symbology reads "RDY," do not squeeze the trigger or continue with simulated weapons employment.

5.3. Maneuvering Limitations. (T-1).

5.3.1. Negative "G" guns jink maneuvers are prohibited.

5.3.2. Minimum airspeed during low altitude offensive or defensive maneuvering is 350 KIAS.

5.3.3. All configurations are authorized for unlimited maneuvering as defined by AFI 11-214. Before conducting unlimited maneuvering in a CAT III configured aircraft, consider gross weight, drag, departure susceptibility and training requirements.

Chapter 6

AIR-TO-SURFACE WEAPONS EMPLOYMENT

Section 6A—General

6.1. General. Reference AFI 11-214 for procedures and restrictions. In addition, F-16 pilots shall comply with the requirements of this chapter. **(T-1).**

6.2. Simulated Gun Employment. (T-1).

6.2.1. Never perform a trigger check with a hot gun, regardless of Master Arm switch position.

6.2.2. Never perform simulated gun employment (squeezing the trigger with the Master Arm switch in SIM) with a hot gun (one that is not safe IAW T.O. 1F-16x-34-1-1). This restriction does not apply on a controlled range against targets approved for gun employment with ammunition loaded.

6.2.3. Prior to flight, confirm the status of the gun system. Prior to simulated gun employment, perform a trigger check with the Master Arm switch in SIMULATE and the aircraft pointed away from other aircraft and populated areas. If HUD symbology reads “ARM” or SMS/MFD symbology reads “RDY,” do not squeeze the trigger or continue with simulated weapons employment.

6.3. Training Missions with a Hot Gun. (T-1).

6.3.1. Pilots will not select strafe submode until immediately prior to roll in and will deselect strafe submode immediately after completing the safe escape maneuver.

6.3.2. When firing the laser, ensure you are not in a mode that will allow the gun to fire.

6.3.3. AGCAS will not be disabled for strafe operations. **(T-3).** During LAS an automated recovery may occur near 2000’ slant range; therefore cease fire prior to 2000’ slant range or rounds may be employed well long of the target during automated pull-up.

6.4. Simulated Attacks against off-Range or Manned Targets. Do not conduct such attacks with hung ordnance. Do not conduct them with live ordnance, except for 20 mm ammunition in a gun safed IAW T.O. 1F-16x-34-1-1. When the aircraft is loaded with expendable stores (e.g. bombs, external fuel tanks, TERs carted at the pylon), load simulated weapons (zero quantity) in the SMS/MFD only on empty or uncartered/unexpendable stations (**Exception:** Captive Maverick and HARM missiles may be selected). Confirm the Master Arm switch is in OFF or SIMULATE prior to the first attack. Flight lead will query and flight members will reply to a “*check zero quantity, uncartered station*” radio call. **(T-1).**

6.5. Weather. In training, do not conduct climbing or diving deliveries with a ceiling below 2,000 feet AGL or level deliveries with a ceiling below 1,500 feet AGL. **(T-1).**

6.6. Pop-Up Attacks. Abort pop-up attacks if airspeed decreases below 350 KIAS (300 KIAS above 10,000 feet AGL). **(T-1).**

6.7. Target Identification. Pilots shall positively identify the target prior to weapons release. For wartime or contingency sorties, comply with ROE. For training sorties, achieve positive

identification by either visually acquiring the target or by confirming target location through valid on-board/off-board cues. Cues may include, but are not limited to, radar, GPS, marking rounds, TGP or IR Maverick lock on, IR pointers or NVG-compatible marking devices. Exercise caution when relying on a single cue to confirm target location. **(T-1).**

6.8. Safety of Ground Personnel. When ground controllers are present on Class B/C ranges, range personnel will brief pilots on locations of these personnel and each pilot will acknowledge. Pilots must know applicable range weapons delivery procedures, appropriate targets and weapons footprints. Pilots shall not expend ordnance if any doubt exists as to the ground personnel or intended target locations. **(T-1).**

Section 6B—Night

6.9. Altitude. Compute an MSA for the entire bombing pattern using the guidance in AFI 11-214. The minimum altitude for night High Angle Strafe (HAS) is the Target MSA (as defined in Attachment 1) unless executed by an “NVG-LOWAT” or “NVG High Angle Strafe Low Altitude” qualified pilot (as defined in AFI 11-2F-16 V1) under high-illumination conditions (as defined in AFI 11-214). For HAS, pilots will review and confirm parameters prior to roll-in. **(T-1).**

6.10. Bank Angle. Do not exceed 135 degrees of bank when returning to the low altitude structure (<5K AGL). **(T-1).**

Chapter 7

ABNORMAL OPERATING PROCEDURES

7.1. General. Follow the procedures in this chapter when other than normal circumstances occur. These procedures do not supersede procedures contained in the flight manual. **(T-1).**

7.1.1. Do not accept an aircraft for flight with a malfunction which is addressed in the emergency/abnormal procedures section of the flight manual until appropriate corrective actions have been accomplished.

7.1.2. Do not fly an aircraft with a tripped engine monitoring system (EMS) Go-No-Go indicator (Bit Ball) until maintenance has accomplished the appropriate procedures and cleared the fault.

7.1.3. Do not taxi with a known malfunction of the nose-wheel steering system, the brake system, or a generator [**Note:** F-16C/D aircraft may be taxied with a single generator failure (main or standby) if the other generator is operating normally].

7.1.4. Once a malfunctioning aircraft system is isolated, do not use that system again unless its use in a degraded mode is essential for recovery. Do not conduct ground or in-flight trouble-shooting after flight manual emergency procedures are complete.

7.1.5. In the F-16B/D, the pilot in command is primarily responsible for handling in-flight emergencies. The additional pilot will confirm that all critical action procedures have been accomplished and will provide checklist assistance at the request of the pilot in command.

7.1.6. For actual/perceived flight control malfunctions, pilots will terminate maneuvering and take appropriate action. If the problem was due to crew/passenger stick or rudder interference, the pilot will take positive action to ensure no further control interference occurs.

7.1.7. When a fuel imbalance exceeds dash one limits, terminate tactical maneuvering and investigate. If the problem was caused by a slow feeding external or internal fuel tank and can be corrected, the mission may continue IAW TO 1F-16A/C-1. If not, terminate the mission. Instruments, deployment missions, level weapons deliveries and straight-through-non-maneuvering intercepts are authorized to reduce gross weight until a safe landing is possible.

7.2. Critical Action Procedures (CAPs). CAPs are in [Attachment 4](#).

7.3. Ground Aborts. (T-1).

7.3.1. If a flight member aborts prior to takeoff, the flight lead will normally renumber the flight to maintain a numerical call sign sequence. Flight leads will advise the appropriate agencies of such changes.

7.3.2. Pilots who do not takeoff with the flight may join the flight in accordance with the brief or flight lead instructions. If a join-up is to be accomplished on an air-to-ground range, all events will be terminated until the joining aircraft has achieved proper spacing.

7.4. Takeoff Aborts. (T-1).

7.4.1. If an abort occurs during takeoff roll, say call sign and intentions when practical. Following aircraft will alter takeoff roll to ensure clearance or abort takeoff if adequate clearance cannot be maintained. The phrase "Cable, Cable, Cable" will be used to indicate a departure-end cable arrestment. The phrase "Barrier, Barrier, Barrier" will be used to indicate a departure-end net arrestment. Local procedures will address net barrier raising procedures.

7.4.2. When aborting above 120 KIAS, or whenever hot brakes are suspected, declare a ground emergency. Taxi the aircraft to the designated hot brake area and follow hot brake procedures.

7.4.3. If aborting at or above 100 KIAS, lower the hook. If aborting below 100 KIAS, lower the hook if there is any doubt about the ability to stop on the remaining runway.

7.5. Air Aborts. (T-1).

7.5.1. If an abort occurs after takeoff, all aircraft will maintain their original numerical call sign.

7.5.2. Escort aborting aircraft with an emergency condition to the field of intended landing. When other than an emergency condition exists, the flight lead will determine if an escort for the aborting aircraft is required.

7.5.3. Abort the mission, regardless of apparent damage or subsequent normal operation, for any of the following:

7.5.3.1. Bird strike

7.5.3.2. Actual or suspected foreign object damage.

7.5.3.3. Recovery below FRAG altitude with live ordnance.

7.5.3.4. Moderate to severe icing.

7.5.3.5. Over-G (**Note:** Land as soon as practical out of a straight-in approach).

7.5.3.6. Flight control system anomalies, including uncommanded departures from controlled flight (**Exception:** intentional departures from controlled flight conducted IAW a MAJCOM-approved syllabus), but not including flight control system lights that reset IAW flight manual procedures.

7.5.3.7. Engine flameout/stagnation or shutdown.

7.5.3.8. Lightning strike.

7.6. Radio Failure (NORDO). Reference AFI 11-205 and the Flight Information Handbook.

7.6.1. NORDO in Formation. (T-1).

7.6.1.1. A pilot who experiences total radio failure while in close or route formation will maneuver within close/route parameters to attract the attention of another flight member and give the appropriate visual signals. The mission should be terminated as soon as practical and the NORDO aircraft led to the base of intended landing or a divert base. A formation approach to a drop-off on final should be performed unless safety considerations dictate otherwise.

7.6.1.2. If flying other than close/route formation when radio failure occurs, the NORDO aircraft should attempt to rejoin to a route position at approximately 500 feet on another flight member. The NORDO aircraft is responsible for maintaining clearances from other flight members until his presence is acknowledged by a wingrock, signifying clearance to join. Once joined, the NORDO aircraft will give the appropriate visual signals. If pre-briefed, the NORDO aircraft may proceed to a rendezvous point and hold. If no one has rejoined prior to reaching bingo fuel, the NORDO aircraft should proceed to the base of intended landing or a divert base. Aircraft experiencing any difficulty/emergency in addition to NORDO will proceed as required by the situation.

7.6.2. NORDO on a Class A Range or a Manned Class B Range.

7.6.2.1. Attempt contact with the RCO on the appropriate back-up frequency or back up radio.

7.6.2.2. If contact cannot be reestablished, make a pass by the range control tower on the attack heading while rocking wings and turn in the direction of traffic. The flight lead will direct another flight member to escort the NORDO aircraft to a recovery base or rejoin the flight and RTB.

7.6.2.3. If the NORDO aircraft has an emergency, make a pass by the range control tower, if practical, on the attack heading while rocking wings, turn opposite the direction of traffic, and proceed to a recovery base. The flight lead will direct a flight member to join-up and escort the emergency aircraft.

7.6.3. NORDO on an Unmanned Class B Range or on a Class C Range.

7.6.3.1. Make a pass on the target maintaining normal pattern spacing, if possible, while rocking wings. The flight lead will direct another flight member to escort the NORDO aircraft to a recovery base or rejoin the flight in sequence and recover. If the NORDO aircraft has an emergency, if practical, it will make a pass on the target maintaining normal pattern spacing, rocking wings, turn opposite direction of traffic and proceed to a recovery base. The flight lead will direct a flight member to join-up and escort the emergency aircraft.

7.6.3.2. Unexpended Ordnance. If radio failure occurs and circumstances preclude landing with unexpended ordnance, safe jettison of ordnance may be accomplished provided the following conditions are met:

7.6.3.3. The NORDO aircraft joins on another flight member who has radio contact with the RCO and the remainder of the flight.

7.6.3.4. Stores jettison visual signals specified in AFI 11-205 are relayed to the NORDO aircraft to initiate jettison.

7.6.4. NORDO during Missile or Air-to-Air Gunnery Firing.

7.6.4.1. Aircraft will not fire without two-way radio contact.

7.6.4.2. If radio failure occurs, safe the armament switches, join on another member of the flight or the tow aircraft, IAW paragraph [7.6.1](#)

7.6.4.3. Gunnery target tow aircraft experiencing radio failure will rock wings and continue the turn if an attack is in progress. The flight lead of the attacking aircraft will

join on the tow's wing. Remain clear of the banner in the event it is cut. The tow pilot will use standard hand signals to indicate his difficulty. The flight lead will signal when the banner is cleared for cut with a slicing motion across the throat. After the banner is away and the flight lead determines there is no remaining cable, he will take the lead, RTB with the tow aircraft on the wing, advise the tower of the NORDO and establish the appropriate landing pattern. If cable remains, follow local procedures.

7.6.5. NORDO during Recovery.

7.6.5.1. If a formation straight-in approach is flown and a go-around becomes necessary, the chase will go-around, pass the NORDO aircraft and rock his wings. The NORDO aircraft will go-around, if the situation allows. If the NORDO aircraft is in formation as a wingman, the leader will initiate a gentle turn into the wingman and begin the go-around.

7.6.5.2. To signal the need for an approach-end arrestment, lower the tailhook (visual formation) or fly a straight in approach flashing the landing light (unescorted).

7.7. Severe Weather Penetration. Do not fly through severe weather. If unavoidable, flights will split-up and obtain separate clearances prior to severe weather penetration. **(T-1).**

7.8. Spatial Disorientation (SD). SD has proven to be a leading killer of F-16 pilots. Although SD is most common at night or in IMC, it can and has happened in day VMC. Reference AFMAN 11-217V1 for information on the causes of SD, how to avoid it, and how to mitigate its consequences.

7.8.1. Enabling PARS is an acceptable recovery method from SD induced unusual attitudes, reference AFTTP 3-3.F16 for recommended throttle techniques during PARS recoveries.

7.8.2. Pilots should ensure deconfliction from other aircraft (primarily above or below their position) prior to PARS activation.

7.9. Lost Wingman. (T-1).

7.9.1. Priorities. The first priority is to establish safe separation from other aircraft (e.g., tanker or wingman). Next, obtain a separate clearance to ensure obstacle/terrain clearance and clearance from other traffic.

7.9.2. Prohibitions. Do not practice lost wingman procedures in other than day VMC conditions.

7.9.3. General Procedures. Simultaneously transition to instruments and inform lead while executing lost wingman procedures (ref AFTTP 3-3.F16 for amplifying data). Lead will acknowledge the radio call and transmit attitude, heading, altitude and airspeed. Once lost wingman procedures have been executed, permission to rejoin must be obtained from the flight lead.

7.9.4. Two- or Three-Ship Flights. **(Note:** If in three-ship echelon, refer to four-ship lost wingman procedures.)

7.9.4.1. Wings-Level Flight (climb, descent or straight and level). Simultaneously inform the leader and turn away using 15 degrees of bank for 15 seconds, then resume heading and obtain a separate clearance.

7.9.4.2. Outside the Turn. Reverse the direction of turn using 15 degrees of bank for 15 seconds and inform the leader. Continue straight ahead to ensure separation prior to resuming the turn. Obtain a separate clearance.

7.9.4.3. Inside the Turn. Momentarily reduce power to ensure nose-tail separation and inform the flight lead to roll out of the turn. Maintain angle of bank to ensure lateral separation and obtain a separate clearance. The leader may resume turn only when separation is ensured.

7.9.4.4. Precision/Non-precision Final. The wingman will momentarily turn away to ensure clearance, inform lead, and commence the published missed approach procedure while obtaining a separate clearance.

7.9.4.5. Missed Approach. The wingman will momentarily turn away to ensure clearance, inform lead, and continue the published or assigned missed approach procedure while climbing to 500 feet above missed approach altitude. Obtain a separate clearance.

7.9.5. Four-Ship Flights. If only one aircraft in the flight becomes separated, the previous procedures would provide safe separation, but since it is impossible for number 4 to immediately ascertain that number 3 still has visual contact with the leader, it is imperative that number 4's initial action be based on the assumption that number 3 has also become separated. Numbers 2 and 3 will follow the procedures outlined above. Number 4 will follow the appropriate procedure listed below:

7.9.5.1. Wings-Level Flight. Simultaneously inform the leader and turn away using 30 degrees of bank for 30 seconds, then resume heading and obtain a separate clearance.

7.9.5.2. Outside the Turn. Reverse direction of turn using 30 degrees of bank for 30 seconds to ensure separation from lead and number 3 and obtain a separate clearance.

7.9.5.3. Inside the Turn. Momentarily reduce power to ensure nose-tail separation and increase bank angle by 15 degrees. Inform the leader to roll out. Obtain a separate clearance. Leader will resume turn only when separation is ensured.

7.10. Armament System Malfunctions. (T-1).

7.10.1. General. Do not attempt to expend ordnance using a weapons release system with a known malfunction. If abnormal missile launch or erratic missile flight occurs, have the launching aircraft visually inspected by a chase pilot, if possible, to determine if any damage has occurred.

7.10.2. Inadvertent Release. Record switch positions at the time of inadvertent release and impact point, if known, and provide the information to debrief personnel. Check switches safe and do not attempt further release in any mode. Treat remaining stores as hung and obtain a chase aircraft for RTB, if practical. If remaining stores present a recovery hazard, jettison in a suitable area on a single pass, if practical.

7.10.3. Hung Freefall Ordnance or Missile Hangfire/Misfire. First confirm switches/SMS settings were correct. If they were, record all relevant switch/SMS settings and proceed as follows.

7.10.3.1. Hung Live Freefall Ordnance. Attempt delivery using an alternate delivery mode, if applicable. If unsuccessful, use selective jettison procedures for the store. If unsuccessful and the ordnance is either unsecure or the security of the ordnance cannot be determined, consider selective jettison of the rack.

7.10.3.2. Hung Practice/Inert Freefall Ordnance. Make an additional attempt to expend. If unsuccessful, select an alternate delivery mode and try again. If unsuccessful, ordnance from other stations/dispensers may be released provided this does not violate load symmetry limits. If remaining stores present a recovery hazard, jettison in a suitable area on a single pass, if practical.

7.10.3.3. Maverick Missile Hangfire. A missile that fires but fails to depart the aircraft is a hangfire. If able, have a chase pilot inspect such a missile.

7.10.3.4. Maverick Missile Misfire. A missile that fails to fire when all appropriate switches were selected is a misfire. If this occurs, safe the Master Arm switch. If able, have a chase pilot inspect the missile for smoke or fire. If either exists, jettison the missile on the range. If not, pilots may attempt another pass. If the second attempt fails and conditions permit, remain dry in the pattern for 15 minutes, then proceed to the recovery base following hung ordnance/weapons malfunction recovery procedures.

7.10.3.5. Hung Ordnance/Weapons Malfunction Recovery Procedures. Visually inspect the aircraft for damage, if practical. Declare an emergency (not required for hung practice/inert ordnance or hung rockets). Obtain a chase aircraft, if available. Avoid populated areas and trail formations. Land from a straight-in approach.

7.11. In-flight Practice of Emergency Procedures. Reference AFI 11-202V3. A simulated emergency procedure is any procedure that produces an effect closely paralleling the actual emergency. One example would be retarding the throttle sufficiently to emulate the performance of an aircraft with a flamed out or idle engine.

7.11.1. Prohibitions. Do not practice aborted takeoffs in the aircraft. Instead, use the flight simulator, Cockpit Familiarization Trainer or a static aircraft, in that order of preference. Do not practice in-flight engine shutdown. Do not practice SFO patterns unless crash rescue is available and either an active tower or a ROM (or equivalent, e.g. SOF) is in operation. Do not practice SFO patterns in conditions other than day VMC. **(T-1).**

7.11.2. Simulated Flameout (SFO)/Emergency Landing Patterns. OG/CCs will establish specific procedures for SFO training and establish letters of agreement with appropriate agencies. They will publish those procedures in their supplement to this volume. General SFO procedures follow: **(T-1).**

7.11.2.1. The SFO pattern may be entered from any direction or altitude that will ensure the aircraft is properly configured above 2,000 feet AGL and in a position to safely complete the approach.

7.11.2.2. Do not initiate or continue an SFO if a potential traffic pattern conflict exists that would require division of the pilot's attention between the SFO and sequencing with traffic. Discontinue an SFO whenever excessive maneuvering is required, whether as a result of a traffic conflict or when making corrections. Discontinue an SFO if unable to obtain wings level on final by 200 feet AGL. Discontinue an SFO if airspeed drops

below Dash One minimum airspeed any time between base key and the initiation of the flare. Once the decision to discontinue an SFO has been made, initiate a go-around and do not attempt to resume the SFO.

7.11.2.3. Except when operating IAW a MAJCOM-approved syllabus (e.g., AFMC high angle of attack training), do not touch down from an SFO.

7.11.2.4. Make radio calls IAW local procedures, but as a minimum call.

7.11.2.4.1. "High Key"

7.11.2.4.2. "Low Key"

7.11.2.4.3. "Base Key, Gear Down, (Intentions)"

7.12. Search and Rescue (SAR) Procedures. General directive procedures are listed below. OG/CCs will establish specific procedures in the unit supplement to this volume. **(T-1).**

7.12.1. Squawk. Immediately cease tactical maneuvering by executing Knock-It-Off procedures. Place IFF to EMER to alert ATC/GCI/AWACS of the emergency situation.

7.12.2. Talk. Establish an On Scene Commander (OSC). Communicate the emergency situation and intentions immediately to applicable control agencies. Use GUARD frequency if necessary.

7.12.3. Mark. Mark the last known position of survivors/crash site using any means available, e.g. visual ground references, TACAN, INS, EGI, ATC/GCI/AWACS, HMCS, or TGP. Pass this information to follow-on SAR forces.

7.12.4. Separate. Remain above the last observed parachute altitudes until the position of all possible survivors is determined. If visual contact with parachute is not maintained, allow approximately 1 minute per thousand feet (16 feet per second) for parachute descent. The OSC will establish deconfliction between all aircraft involved in the SAR.

7.12.5. Update Bingo/Recovery Base. Revise bingo fuels or recovery bases as required to maintain maximum SAR coverage over survivor(s). Do not overfly bingo. Relinquish OSC duties to more qualified rescue forces (e.g., SANDY 1, US Coast Guard) upon their arrival.

7.12.6. For overwater SAR/CSAR, OSC will utilize every means available (visual, TGP, Radar Ground Map, or Ground Moving Target Modes) to locate vessels that may aid in recovery.

7.13. Post Arresting Gear Engagement Procedures. Do not shut down the engine unless fire/other conditions dictate or directed to do so by the arresting gear crew. Raise the tailhook on the signal from the arresting crew. Do not taxi until directed to do so by the arresting gear crew. **(T-1).**

Chapter 8

LOCAL OPERATING PROCEDURES

8.1. General. This chapter provides a consolidated framework for wings to supplement (IAW AFI 33-360) local operating procedures. Units composed of multiple aircraft types may publish guidance in a single, stand-alone local operating instruction instead of supplementing this AFI. Added or stand-alone procedures will not be less restrictive than those contained elsewhere in this volume. This chapter is not intended to be a single source document for procedures contained in other directives or regulations. Avoid unnecessary repetition of guidance provided in other established directives; however, reference to those directives is acceptable when it serves to facilitate the location of information. This chapter is authorized to be issued to each pilot. Units may supplement the following paragraphs for local operating guidance: **(T-1)**.

8.1. (AVIANOAB)General. This chapter supplements operational directives and establishes local procedures for all pilots assigned and attached to the 31st Fighter Wing (FW). Information contained in other directives will not be repeated in this regulation. Close study of this regulation, the *31 FW Pilot Aid*, *31 FW Standards*, current FCIFs, OGRFs and applicable Italian Publications (PIV, NOTAMs, Manuale BOAT Vol 2, Stato Maggiore Aeronautica [SMA] 7, SMA 73, Standard Operating Procedure [SOP] ADD 8, SOP ADD – 01, SMA 311) is necessary to effectively and safely employ from Italy.

8.1.1. Section A. Introduction.

8.1.1.1. **(Added-AVIANOAB)** Deviations. Report deviations immediately to the flying squadron commander and the 31 OG/CC.

8.1.1.2. **(Added-AVIANOAB)** Waivers. Request waivers through the chain of command. 31 OG/CC is the waiver authority for this supplement. 31 OG/OGV will publish long-term waivers (greater than 30 days) as Flight Crew Information Files (FCIFs) or Operations Group Read Files (OGRFs).

8.1.2. Section B. General Policy.

8.1.2.1. **(Added-AVIANOAB)** Aircraft Publications. The following publications will be carried in each 31 FW aircraft for local operations:

8.1.2.1.1. **(Added-AVIANOAB)** ENAME IFR Supplement.

8.1.2.1.2. **(Added-AVIANOAB)** Terminal Departure and Approach Books: Vol-6 (TCN, if applicable).

8.1.2.1.3. **(Added-AVIANOAB)** Enroute High Altitude Charts: H3/4, H5/6, H7, H15/16.

8.1.2.1.4. **(Added-AVIANOAB)** Enroute Low Altitude Charts: L9/10, L11/12.

8.1.2.1.5. **(Added-AVIANOAB)** Flight Information Handbook.

8.1.2.1.6. **(Added-AVIANOAB)** RCP of F-16D models will contain a Vol-6, IFR Supplement, and a Flight Information Handbook.

8.1.2.2. **(Added-AVIANOAB)** Single-Ship Missions. Single-ship missions are permitted in accordance with AFI 11-214, *Air Operations Rules and Procedures*.

- 8.1.2.2.1. **(Added-AVIANOAB)** The following are authorized pre-planned single-ship missions:
- 8.1.2.2.1.1. **(Added-AVIANOAB)** Incentive orientation flights. See paragraph 8.1.2.14.
 - 8.1.2.2.1.2. **(Added-AVIANOAB)** Functional Check Flights or Operational Check Flights.
 - 8.1.2.2.1.3. **(Added-AVIANOAB)** Instrument proficiency and evaluation sorties.
 - 8.1.2.2.1.4. **(Added-AVIANOAB)** The initial/night Local Area Orientation (LAO) sortie (D-model, with IP in RCP).
 - 8.1.2.2.1.5. **(Added-AVIANOAB)** Aircraft Handling Characteristics (AHC) sorties.
 - 8.1.2.2.1.6. **(Added-AVIANOAB)** Tasked NATO Exercise Sorties.
 - 8.1.2.2.1.7. **(Added-AVIANOAB)** Cross-country sorties, including deployment/redeployment sorties, with 31 OG/CC approval.
 - 8.1.2.2.1.8. **(Added-AVIANOAB)** Single-ship sorties between Aviano and the Depot Level Maintenance Facility at SABCA, Belgium, or any USAFE airbase in continental Europe (or flights from those facilities to Aviano) are pre-approved, but require 31 OG/CC notification.
 - 8.1.2.2.1.9. **(Added-AVIANOAB)** Squadron Supervisors may authorize single-ship missions as a result of fallout. Single-Ship air-to-surface sorties will be conducted IAW AFI 11-214.
- 8.1.2.2.2. **(Added-AVIANOAB)** Single ship missions to Slunj Range or Pocek Range are not authorized.
- 8.1.2.3. **(Added-AVIANOAB)** Non-Demanding Sortie Guidance. Demanding and Non-Demanding sorties will be flown IAW AFI 11-2F-16V1, Attachment 2.
- 8.1.2.3.1. **(Added-AVIANOAB)** Red Air sorties may be considered Non-Demanding if executed under limited-maneuvering training rules.
- 8.1.2.4. **(Added-AVIANOAB)** Filing Flight Plans.
- 8.1.2.4.1. **(Added-AVIANOAB)** Flight Plan Submission/Approval. 31st Fighter Wing Scheduling (31 OSS/OSOS) submits a daily flying schedule PVG (Programma Voli Giornalieri) the workday prior to the date of flight for all wing/deployed units' training flights to Italian Base Operations Center (BOC).
 - 8.1.2.4.2. **(Added-AVIANOAB)** Squadrons' requests for local flying must be submitted by 0900L, the working day prior, to 31 OSS/OSOS. Italian holidays, Saturdays, and Sundays are not considered workdays.
 - 8.1.2.4.3. **(Added-AVIANOAB)** Wing scheduling will deconflict airspace requests and submit the PVG by 1300L through ITAF BOC. 31 OSS/OSOS will confirm all

sorties forwarded by PVG message are approved by AUTMIX (Assigned Mission) message. Missions not on the AUTMIX message are not authorized.

8.1.2.4.4. **(Added-AVIANOAB)** Aviano Stereo Routes. Stereo routes are listed in Attachment 18 and the *31 FW Pilot Aid* and will be used to the maximum extent possible for all local sorties. Any changes to the stereo route of flight, or local flights not utilizing a stereo route require submission of a Piano Di Volo-Flight Plan two working days prior to the flight. Upon approval by Airfield Management Operations (AMOPS), a copy must be provided to 31 OSS/OSOS for inclusion on the PVG. The PVG and the Piano Di Volo-Flight Plan must match exactly. Non-local flight plans must be submitted no later than (3) hours prior to takeoff.

8.1.2.4.4.1. **(Added-AVIANOAB)** Fax or email the Italian Flight Plan, Piano Di Volo (equivalent to DD Form 1801), IAW FLIP General Planning Chap 4 to Airfield management. Before faxing/emailing, ensure the flight plan has been signed/electronically signed by the pilot in command. A follow-up call will be made to ensure the fax was received (fax 8674, Ph 7222). Squadrons will maintain the flight plan on file for 90 days.

8.1.2.4.5. **(Added-AVIANOAB)** The fighter squadrons, AMOPS, and the 31 OG/SOF will receive a copy of the PVG by email or fax. AMOPS will use the PVG to file the Piano Di Volo-Flight Plans. If an altitude higher than the published maximum is required, a separate message must be submitted the day prior.

8.1.2.4.6. **(Added-AVIANOAB)** Flight plans filed on the same day of flight (i.e. after the PVG is published) are considered “immediate” flight plans. Notify wing scheduling (DSN 632-8490) with the requirement for an immediate mission NLT 1 hour before the new takeoff time. This is not a routine request and must be accomplished whenever a flight cannot meet the original takeoff time by -15 to +45 minutes, a change is required (route, operation area, etc.), or an addition to the flying schedule is required. Immediate requests made within 1 hour of takeoff have a high probability of being denied or delayed due to the complicated approval process.

8.1.2.4.7. **(Added-AVIANOAB)** SARMs will print and post the NOTAMs daily and have the NOTAMs available for pilot review NLT 15 minutes prior to the first scheduled flight brief time.

8.1.2.4.8. **(Added-AVIANOAB)** Low-level flights must reference the BBQ (Italian low-level series) NOTAMs. See Attachment 17, *31 FW Low-Level Procedures*, for further instructions.

8.1.2.5. **(Added-AVIANOAB)** Suspected Flying Violations. Pilots who are involved in a suspected flying violation will inform their supervisor, give the mission video file to the squadron commander, and submit a written report to the 31 OG/CC, who will forward to the ITAF, if required.

8.1.2.6. **(Added-AVIANOAB)** Quiet Hours

8.1.2.6.1. **(Added-AVIANOAB)** The 31 FW hosts various wing, ITAF, 3AF, and NATO official functions requiring restrictions to be levied on airfield operations

creating excessive levels of noise. The following restrictive airfield operation categories will be implemented when required:

8.1.2.6.1.1. **(Added-AVIANOAB) CATEGORY 1:** Operations cease. No aircraft or helicopter takeoffs, landings, taxi operations, engine starts, engine test operations, AGE operation, or towing of aircraft or support equipment to include munitions and fuel truck operations.

8.1.2.6.1.2. **(Added-AVIANOAB) CATEGORY 2:** Aircraft, AGE (Aircraft Ground Equipment), and engine test operations (not to exceed idle power unless operated in the Hush House) may be permitted in the specified loops. All aircraft takeoff, landings, and taxi operations are prohibited.

8.1.2.6.1.3. **(Added-AVIANOAB) CATEGORY 3:** NATO contingency aircraft and helicopter launch and recovery operations are permitted to include operation of necessary AGE equipment. All other operations not in direct support of launching NATO tasked contingency sorties are prohibited (except those listed in Cat 2). All recoveries will be from a straight-in approach to full stop landing. Aircraft may be required to return to parking spots via alternate taxi routings.

8.1.2.6.1.4. **(Added-AVIANOAB) CATEGORY 4:** Normal aircraft and support ground operations are permitted. No aircraft takeoffs allowed (except those listed in Cat 3). Aircraft returning to Aviano will be required to recover from a straight-in approach to full stop landing only. Overhead and practice approaches are prohibited. Aircraft may be required to return to parking spots via alternate taxi routings.

8.1.2.6.2. **(Added-AVIANOAB) Coordination.** Coordination will be accomplished through 31 OG Scheduling (632-7838/8490). A minimum of 10 days advanced notice is required in order to reduce the impact to flying operations. Variations to this policy are at the discretion of the 31 OG/CC. 31 OG/CC through ITAF/CC is the approval/waiver authority for Aviano Airfield Restrictive Operations during the hours between 0700L-2300L. 31 MXG/CC through ITAF/CC is the approval/waiver authority during the hours of 2300L-0700L. This policy applies to all operations and maintenance personnel assigned to the 31 FW.

8.1.2.6.3. **(Added-AVIANOAB) Waiver to Quiet Hours:** IAW HQ USAFE A3 waiver letter dated 6 Jan 05, DV flights for SACEUR, DCDRUSEUCOM, Component Commanders, NAF Commanders, USAFE/CV, and Deputy Commander Air Headquarters Ramstein are exempt from quiet hour restrictions imposed by NAF, Wing, or lower echelon organizations at all USAFE installations. This HQ USAFE A3 waiver does not apply to ITAF imposed quiet hours at Aviano AB. The waiver authority for ITAF imposed quiet hours is ITAF/CC. Additionally, aircraft emergencies are exempt from all quiet hour restrictions.

8.1.2.7. **(Added-AVIANOAB) Survival Vests.** F-16 aircrew will wear a survival vest during all sorties.

8.1.2.8. **(Added-AVIANOAB) Local Weather Procedures**

8.1.2.8.1. **(Added-AVIANOAB)** Aviano has both USAF and Italian Air Force (ITAF) weather observers. On the Advanced Meteorological Information System (AMIS) the identifier LIPA is Aviano's ITAF Weather. Aviano's USAF weather observers prepare and brief a Mission Execution Forecast (MEF), a customized weather depiction for USAF pilots. The MEF includes, but is not limited to, takeoff and landing weather at Aviano, alternate airfield weather, and working airspace weather.

8.1.2.8.2. **(Added-AVIANOAB)** ITAF and USAF observers use different techniques for measuring visibility and this sometimes leads to different results. ITAF Weather determines the airport status (Open or Closed / IFR or VFR), ATIS, and all the weather information reported by ATC. If Aviano airport status is IFR, the VFR pattern is closed, regardless of USAF weather observations.

8.1.2.8.3. **(Added-AVIANOAB)** The USAF Weather can be used for determining required divers/divert/alternates, for decisions to launch aircraft, and for decisions to begin instrument approaches. Authority to use USAF Weather for such decisions rests with 31 OG/CC and will be transmitted through the SOF.

8.1.2.8.4. **(Added-AVIANOAB)** Aviano's airfield elevation is approximately 100' above airfields within a 200 nm radius. During periods of fog it is not unusual to have unrestricted visibility at Aviano, while the neighboring airfields have visibilities of less than 400 meters. A slight change in temperature or wind can cause drastic changes in Aviano's weather with little or no warning.

8.1.2.8.5. **(Added-AVIANOAB)** Thunderstorm & Severe Weather Avoidance. Aviano's close proximity to the Dolomite Mountains makes the area conducive to rapidly changing weather and unstable air leading to cumulus buildup and thunderstorms, particularly in the summer and fall. In addition to the guidance in AFI 11-202v3, the following steps will be taken when thunderstorms are a factor in the local flying area:

8.1.2.8.5.1. **(Added-AVIANOAB)** Top 3s will brief known and forecasted areas of thunderstorm activity during Step Briefs.

8.1.2.8.5.2. **(Added-AVIANOAB)** The Supervisor of Flying (SOF) will work with the weather shop and flights airborne to identify thunderstorm activity and their impact to local flying operations.

8.1.2.8.5.3. **(Added-AVIANOAB)** Prior to takeoff, pilots will contact the SOF to determine if thunderstorms are a factor to their departure routing, airspace and/or recovery. SOFs will provide recommended routing, altitudes and airspace to avoid them.

8.1.2.8.5.4. **(Added-AVIANOAB)** Once airborne, flight leads, or their designated representatives, will provide a PIREP to the SOF along with any additional recommendations to avoid possible flight hazards.

8.1.2.8.5.5. **(Added-AVIANOAB)** When possible, flight leads will use Ground Map Radar to further aid in the detection and avoidance of thunderstorms.

8.1.2.8.6. **(Added-AVIANOAB)** Aircrew will wear Anti-Exposure suits IAW AFI 11-301V1, *Aircrew Life Support Program*. Aircrew will wear anti-exposure suits on any preplanned over water flight when the water temperature is 60F (15.5C) or less. The OG/CC may waive anti-exposure suit wear when local air temperature is 70F (20C) or greater and the water temperature is 51F or greater. Aircrew will wear anti-exposure suits over water transit to/from Sara, Foligno, Speedy, or over water training in those airspaces, when cold water conditions exist as described above (gliding distance to land is not a consideration).

8.1.2.9. **(Added-AVIANOAB)** Fuel Requirements and Bingo Fuel

8.1.2.9.1. **(Added-AVIANOAB)** 31 FW SOFs will designate a divert field at all times due to single runway operations at Aviano. When required, this field will also constitute as an alternate per AFI 11-202 Vol 3. Pilots will use this field for fuel planning purposes. SOFs will ensure that the following three items are available on the ATIS: Aviano recovery fuel status (IFR or VFR), designated divert field, and the divert field status (IFR or VFR). Aviano airfield pattern status (IFR vs. VFR) is determined by the Tower Watch Supervisor through ITAF weather observations (see 8.1.2.8.2.). The divert field and divert field weather status is determined by the SOF. Format will be: "31 FW Fuel Status: VFR/IFR Bingos, divert is (base), VFR/IFR."

8.1.2.9.1.1. **(Added-AVIANOAB)** "VFR" means that pilots may plan fuels to recover via the normal VFR pattern entry procedures, VFR pattern, and landing.

8.1.2.9.1.2. **(Added-AVIANOAB)** "IFR" means that pilots will plan fuels to recover via an IFR pattern (radar vectors or instrument penetration) and landing.

8.1.2.9.2. **(Added-AVIANOAB)** Fuel requirement at the divert field is based on the ability or inability to fly an overhead pattern. Daytime weather at or better than 2,500'/5 km is considered "VFR" (i.e. no instrument approach required), and weather worse than 2,500'/5 km or night is considered "IFR" (i.e. instrument approach required).

8.1.2.9.3. **(Added-AVIANOAB)** When using VFR Bingos at Aviano, pilots will arrive on initial with the VFR divert fuel specified in the *31 FW Pilot Aid*. When using IFR Bingos, pilots will land with the IFR divert fuel specified in the *31 FW Pilot Aid*.

8.1.2.9.4. **(Added-AVIANOAB)** Divert fuels are calculated to execute a low approach, military power climb, no jettison, maximum range cruise, and enroute descent to arrive overhead the divert field with 1,000 pounds of fuel remaining if the divert fuel requirement is "VFR." If the divert field fuel requirement is "IFR," 400 pounds is added for a penetration and approach. Use the fuel planning calculations in the *31 FW Pilot Aid*.

8.1.2.9.5. **(Added-AVIANOAB)** During recovery delays, advise Aviano Approach and the SOF of fuel remaining, in minutes, until reaching divert fuel. Only declare Minimum or Emergency Fuel IAW AFI 11-2F-16V3.

8.1.2.9.6. **(Added-AVIANOAB)** All *primary* divert airfields listed in the *31 FW Pilot Aid* have compatible, non-radar required, published approaches. *Emergency*

divert airfields in the *31 FW Pilot Aid* are generally not suitable as IFR alternates due to approaches that are either incompatible or that require radar.

8.1.2.9.7. **(Added-AVIANOAB)** Dual Alternates. Refer to AFI 11-202V3, USAFE Supplement for dual alternate criteria and restrictions.

8.1.2.9.8. **(Added-AVIANOAB)** Canopy Sheeting Guidance. The following guidance applies to both local operating procedures at Aviano as well as off-station flying operations.

8.1.2.9.8.1. **(Added-AVIANOAB)** The SOF will ensure the declared alternate is free of forecast or observed moderate or heavy rain.

8.1.2.9.8.2. **(Added-AVIANOAB)** If forecast (via MEF/TAF) or observed heavy or moderate rain conditions exist at Aviano, the SOF may require canopy sheeting fuels. This is an additional 400# (A/A) / 700# (A/G) to allow for an additional approach at Aviano prior to reaching published divert fuel.

8.1.2.9.8.3. **(Added-AVIANOAB)** Pilots encountering canopy sheeting will write up the aircraft Code 2. Details of the incident will be reflected in the Top 3 and SOF EOD reports.

8.1.2.10. **(Added-AVIANOAB)** Ice Foreign Object Damage (FOD).

8.1.2.10.1. **(Added-AVIANOAB)** When Weather declares an "Ice Induction Advisory" (weather conditions exist that are favorable for engine ice induction), the SOF will notify FS Top 3s and the first aircraft of each go will accomplish an Ice FOD check. Additionally, during an Ice Induction Advisory, if the SOF determines that there is surface-based visible liquid moisture present on the airfield (rain, fog, sleet, snow, or wet runway/taxiways, etc.), then the SOF will declare "Ice FOD procedures in effect." The SOF will notify FS Top3s that Ice FOD procedures are in effect. Top3s will notify the MX Pro Super that Ice FOD Procedures are in effect. The SOF will declare "Ice FOD Procedures in effect" if any aircraft reports an Inlet Icing light regardless of visible moisture. See Figure 8.1.2.10.1.

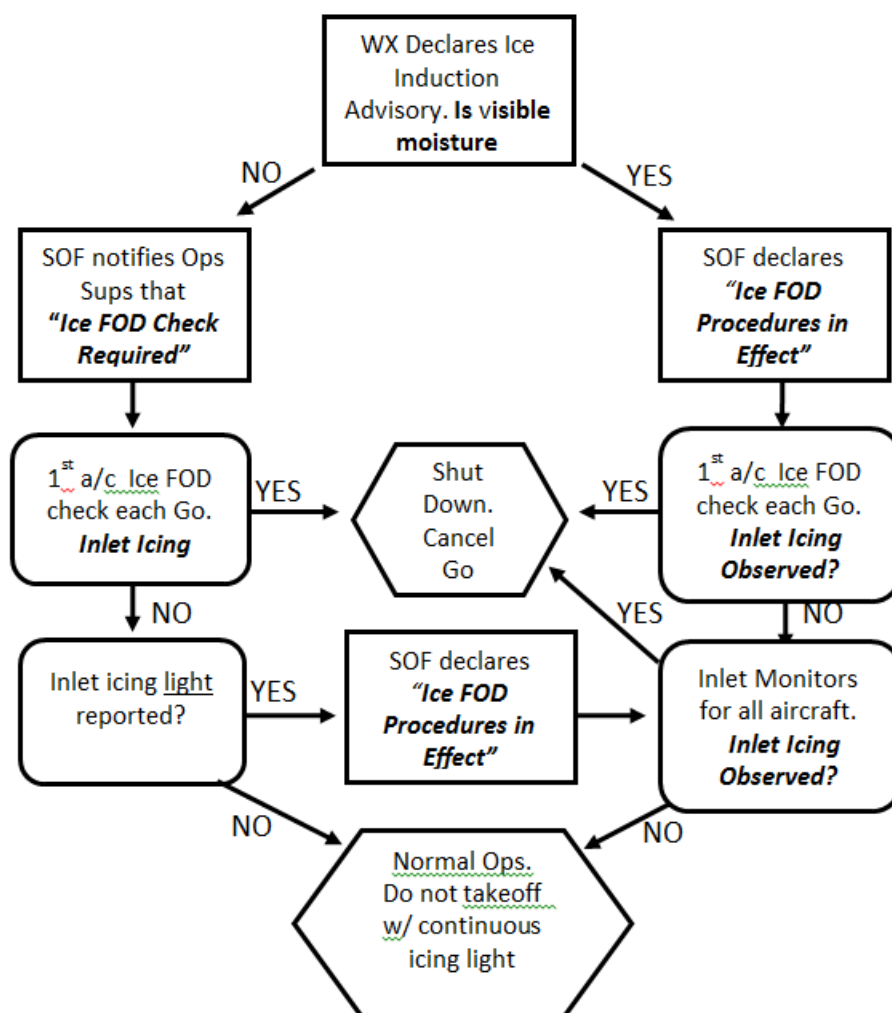
8.1.2.10.2. **(Added-AVIANOAB)** Ice FOD Check. An Ice FOD Check is a risk mitigation procedure to prevent an entire go from starting and experiencing engine induction icing, which could possibly damage aircraft engines. An Ice FOD Check is required any time Weather declares an Ice Induction Advisory.

8.1.2.10.2.1. **(Added-AVIANOAB)** The Ice FOD Check aircraft will start, taxi onto the shelter apron, stop, and run the engine at idle with the Anti-Ice Switch ON for 5 minutes. If no icing in/around the intake is noted by the crew chief, inform the SOF of "negative ICE FOD." If any actual inlet icing is observed by ground observers, shutdown immediately and advise the SOF/Top 3. Top 3 will not allow other aircraft to start engines. Enter a CODE 3 write up in the 781.

8.1.2.10.3. **(Added-AVIANOAB)** Ice FOD Procedures. The SOF will declare Ice FOD Procedures are in effect. Procedures will be IAW the 31 FW Pilot Aid and this Instruction. The first aircraft of the go will perform an ICE FOD check IAW paragraph 8.1.2.10.2 (see Figure 8.1). At least one monitor for every two aircraft is required whenever aircraft are stopped for an extended period (i.e. parking ramp,

EOR, etc.) The crew chief or inlet monitor remains alert for ice buildup in/around the inlet. If the inlet monitor observes any inlet icing, the pilot will shut down immediately, advise the SOF/Top 3, and enter a CODE 3 write up in the 781. If inlet icing is observed at any time, flying operations will terminate (except airborne flights). The SOF will direct all F-16s on the ground to shut down. When ready to taxi, remain at ramp/shelter until traffic delays are eliminated. Do not taxi to alternate EOR or other holding areas unless there are adequate inlet monitors available. Airborne aircraft will continue their mission, recover normally and adhere to the above procedures during de-arm and taxi back.

Figure 8.1. (Added-AVIANOAB) Ice FOD Procedures.



8.1.2.10.4. (Added-AVIANOAB) Inlet Icing Light. Pilots who observe an Inlet Icing Light at EOR should notify ground crews (call a Red-Ball if required). An Inlet Icing Light in the chocks with the engine operating does not require an abort unless ice buildup is visible on the inlet (as little as 1/4 inch can damage the engine) or if the Inlet Icing Light is suspected to be the result of an anti-ice system malfunction (i.e.

icing light stays on >70 consecutive seconds). Aircraft will not takeoff with a continuously illuminated Inlet Icing Light.

8.1.2.11. **(Added-AVIANOAB)** Cross Country Procedures

8.1.2.11.1. **(Added-AVIANOAB)** Cross-country Planning. The pilot in command or his/her designated representative must complete a Piano Di Volo-Flight Plan (ITAF DD Form 1801 equivalent) when departing Aviano or another ITAF base, or a DD Form 1801, *DOD International Flight Plan*. Prior to filing the flight plan, pilots will consult the DOD Foreign Clearance Guide, Airfield Suitability and Restrictions Report (ASRR), USAF Classified Foreign Clearance Guide, FM Immunity information in the appropriate FLIP General Planning document (interim FMI corrections are located in the DINS listed under the country's FIR ICAO identifiers), Flight Information Publication AP/2 for special instructions corresponding to the applicable USA code, and General Planning Guide. The *31 FW Pilot Aid* contains information and checklists for planning cross-country sorties or divers.

8.1.2.11.2. **(Added-AVIANOAB)** ASRR. Flight leads will review the Airfield Suitability and Restrictions Report (ASRR) and the Supplemental Theater Information File (STIF) anytime a flight will land off-station. These are available on the internet site: <https://www.afd.scott.af.mil/>.

8.1.2.11.3. **(Added-AVIANOAB)** Non-DOD Approaches. If an operational requirement exists to deploy to an airfield where DOD approaches are not published or insufficient, then HQ USAFE/A3 must approve the use of a non-U.S. Government instrument approach procedure before the procedure can be flown under IFR. This includes host nation and Jeppesen products.

8.1.2.11.3.1. **(Added-AVIANOAB)** The approval process begins with the USAFE TERPs office, which is responsible for conducting the review. Submit review requests at least 7 duty days prior to the date of anticipated use to: https://wwwmil.usafe.af.mil/direct/a3/doy/doyf/apf/apf_set.htm

8.1.2.11.4. **(Added-AVIANOAB)** Jeppesen Products. If the host nation product is not suitable or compatible, then order commercial Jeppesen products within the following timeline: More than 60 days prior to the deployment, order Jeppesen products through DLA (ref: DMA Aero catalog pg 2-10, para c.2.), just like traditional flight publications. If there are less than 60 days remaining, order products directly from the Jeppesen company, no later than two weeks prior, using the IMPAC card.

8.1.2.11.5. **(Added-AVIANOAB)** End of Runway (EOR) / Last Chance Checks. EOR checks or their equivalent in the chocks (after all other pre-flight checks are complete) are required on all sorties. Transient launch crews in USAFE should have procedures established to check fighter aircraft just prior to takeoff.

8.1.2.12. **(Added-AVIANOAB)** Guest Pilot Procedures. Current and qualified guest pilots will complete the "Guest Pilot Checklist" prior to flight in a 31 FW aircraft. The checklist can be found in the 31 OG Syllabus (31 OG OI 11-2F-16 Vol 1).

8.1.2.13. **(Added-AVIANOAB)** Incentive / Familiarization Flights. Pilots will brief RCP passengers using the *F-16D Passenger Brief* found in the Pilot Aid. Pilots will personally ensure their passengers on orientation flights are correctly strapped in and familiar with the oxygen regulator location and operation. Pilots will ensure their RCP passengers are properly trained and can perform the required tasks while fully dressed and strapped in the aircraft. If they are unable to perform these tasks, they will not fly. This requirement does not apply to frequent FAM flyers. The ejection mode select handle will be set in AFT. Flights will not normally be flown over water. Simulated emergency procedures are not permitted with incentive flyers on board.

8.1.2.14. **(Added-AVIANOAB)** FINI Flights. "Fini-Flights" will be annotated in the remarks column of the printed schedule. Fini-flight aircrew will plan and fly routine missions and mission elements based on the unit's current training program.

8.1.2.15. **(Added-AVIANOAB)** Logistics Support Aircraft (LSA) Events or Exercises. 31 FW aircraft will not be configured with live forward firing ordnance (i.e. no hot gun, missiles, or rockets). Inbound TDY aircraft with live forward firing ordnance attempting to land at Aviano will be diverted unless an emergency is declared. In the unlikely event that an aircraft lands with live forward firing ordnance during an LSA event or exercise, it will taxi clear to the north via A1 or A4 and hold in place until de-armed.

8.1.2.16. **(Added-AVIANOAB)** TCAS Alerts. Heavy civilian traffic in USAFE makes avoiding conflicts with civilian traffic a challenge; especially civilian traffic equipped with Traffic Alert and Collision Avoidance System (TCAS). TCAS is a predictive system and it is mandatory for airliners to execute the calculated avoidance maneuver when prompted, regardless of the actual threat to the aircraft. ATC routinely vectors civilian traffic within 1000' and/or 1-2nm of our training areas. Pilots must be aware that they can set off TCAS advisories even without leaving the training airspace. Pilots must avoid setting off TCAS advisories of civilian traffic. Therefore, pilots will exercise increased vigilance to avoid TCAS conflicts while operating VMC and will avoid any airliner's altitude by at least 2,000' within 10nm perpendicular or 5nm parallel. If required, flight leads are expected to terminate tactical maneuvering and/or air-to-air engagements for traffic operating in close proximity to the vertical/horizontal limits of the assigned airspace.

8.1.3. Section C. Ground Operations.

8.1.3.1. **(Added-AVIANOAB)** Airfield Data (Reference Attachment 5).

8.1.3.1.1. **(Added-AVIANOAB)** Location: N 4601.9, E 1235.8.

8.1.3.1.2. **(Added-AVIANOAB)** Elevation: Field elevation 414' MSL.

8.1.3.1.3. **(Added-AVIANOAB)** Runway (RWY): Single, 05/23, 8583' x 148'. Approximately 1.1 % upslope from SW to NE.

8.1.3.1.4. **(Added-AVIANOAB)** Overruns: Rwy 5 departure end overrun = 892', Rwy 23 departure end overrun = 833'.

8.1.3.1.5. **(Added-AVIANOAB)** Taxiways. North (Taxiway A) and south parallel (Taxiway B) taxiways.

8.1.3.1.6. **(Added-AVIANOAB)** ILS glide slope: 2.5°. Touchdown point is 815' past the threshold of RWY 05. There is no ILS capability to RWY 23. PAPI glide slope is aligned with the ILS glide slope for RWY 05 and PAPIs are available for RWY 23.

8.1.3.1.7. **(Added-AVIANOAB)** WARNING: ILS LOC is unusable 15° or more north of RWY 05 centerline due to rising terrain.

8.1.3.1.8. **(Added-AVIANOAB)** High and low altitude TACAN/ILS approach procedures are available to RWY 05 only. Circling is only authorized to the south due to mountainous terrain to the north.

8.1.3.1.9. **(Added-AVIANOAB)** Aircraft Arresting Systems (standard runway barrier configurations):

Table 8.1. (Added-AVIANOAB) Aircraft Arresting Systems (standard runway barrier configurations)

Runway 05:
<p>E-5, Uni-directional, Barrier #6, 45 feet into departure end overrun.</p> <p>BAK-12, Bi-directional, Barrier #5, 943 feet from departure end.</p> <p>BAK-12, Bi-directional, Barrier #4, 2,402 feet from departure end.</p> <p>E-5, Uni-directional, Barrier #1, 81 feet into Rwy 23 departure end overrun.</p>
Runway 23:
<p>E-5, Uni-directional, Barrier #1, 81 feet into departure end overrun.</p> <p>BAK-12, Bi-directional, Barrier #2, 1,027 feet from departure end.</p> <p>BAK-12, Bi-directional, Barrier #3, 2,463 feet from departure end.</p> <p>E-5, Uni-directional, Barrier #6, 45 feet into Rwy 05 departure end overrun.</p>

8.1.3.1.10. **(Added-AVIANOAB)** Normal barrier configuration is all departure-end barriers connected and raised. Barriers 2 thru 5 have eight-point tie-down systems. When the approach-end barrier is down, pilots should be aware that it takes approximately 15 minutes to string the cable once requested.

8.1.3.1.11. **(Added-AVIANOAB)** The SOF vehicle is designated as the alternate SOF location.

8.1.3.1.12. **(Added-AVIANOAB)** Transition altitude in the Aviano Approach Control airspace is 7,000' MSL. (In Italy, each airdrome identifies its own transition altitude, and they vary from 5,500' MSL to 8,500' MSL.)

8.1.3.1.13. **(Added-AVIANOAB)** Aviano approach airspace is Class C airspace. Aviano airfield is Class D airspace.

8.1.3.2. **(Added-AVIANOAB)** Preflight.

- 8.1.3.2.1. **(Added-AVIANOAB)** Pilots or crew chiefs will not change the gun configuration. Only qualified weapons personnel will safe or arm the gun.
- 8.1.3.2.2. **(Added-AVIANOAB)** All pilots will maintain continuous positive control of their RMC, DTC, and URITs cartridges. The PIC will personally install and remove all recording/data devices in the aircraft. In the event a mechanical malfunction occurs preventing the removal of any of these media, the pilot will remain at the aircraft until the media can be removed. Pilots will not transfer control of any recording/data media to maintenance personnel.
- 8.1.3.2.3. **(Added-AVIANOAB)** Pilots will use caution when fastening and unfastening the lap belt to ensure the fittings do not strike the side consoles. Repeated strikes will chip paint from the console possibly allowing NVG-hostile lighting to leak through or otherwise damage the side consoles.
- 8.1.3.3. **(Added-AVIANOAB)** Engine Start/Ground Ops.
- 8.1.3.3.1. **(Added-AVIANOAB)** Pilots will monitor ground control frequency during engine start until completion of the SEC and EPU checks.
- 8.1.3.3.2. **(Added-AVIANOAB)** Perform after start checks, to include SEC check, fuel main shut-off valve check, and EPU check, in the protected aircraft shelter (PAS), or outside the PAS after confirming jet blast direction is clear. Complete the SEC check prior to pulling the EPU pin.
- 8.1.3.3.3. **(Added-AVIANOAB)** In order to mitigate EGI malfunctions, pilots will comply with the following:
- 8.1.3.3.3.1. **(Added-AVIANOAB)** Have the correct altimeter set prior to starting an alignment.
- 8.1.3.3.3.2. **(Added-AVIANOAB)** Align the EGI as long as possible without setting off NARF.
- 8.1.3.3.3.3. **(Added-AVIANOAB)** Ensure the EGI switch is set to NAV prior to takeoff and not left in NORM.
- 8.1.3.3.4. **(Added-AVIANOAB)** When planning to operate with live ALE-50s, the ALE-50 safety pins will be removed prior to taxi. This will allow for ALE-50 BIT check to be accomplished while still in the chocks.
- 8.1.3.3.4.1. **(Added-AVIANOAB)** Safety pin removal will be initiated by the pilot or with the concurrence of the pilot. Ensure the Master Arm switch is positioned to off prior to removal of the safety pins. Once the integrity of the system has been verified, safety pins will be reinstalled before aircraft will be allowed to taxi to the arming area.
- 8.1.3.4. **(Added-AVIANOAB)** Hot Pit Refueling. Procedures are IAW T.O. 1F-16CM-1CL-1, page N-14, with the following additions:
- 8.1.3.4.1. **(Added-AVIANOAB)** Reference 31 FW Pilot Aid for flow direction.

8.1.3.4.2. **(Added-AVIANOAB)** To de-conflict taxi flow and minimize traffic congestion on the parallel taxiways, pilots will remain on Squadron Operations VHF during de-arming and refueling.

8.1.3.4.3. **(Added-AVIANOAB)** Pilots will not begin or continue refueling operations without an operable intercom with the ground crew and a fire truck present.

8.1.3.4.4. **(Added-AVIANOAB)** URITS and UHF/VHF radio transmissions are permitted during hot pit refueling. Radio frequency (RF) transmissions pose no danger of igniting fuel vapors.

8.1.3.4.5. **(Added-AVIANOAB)** An EPU check will be performed after hot pit refueling in EOR, prior to arming, with the assistance of the EOR crew. For the EPU check, turn off any nonessential equipment and select 100% oxygen.

8.1.3.4.6. **(Added-AVIANOAB)** If the EGI remained on during the EPU check, pilots will verify the EGI is still operating normally prior to takeoff.

8.1.3.4.6.1. **(Added-AVIANOAB)** Pilots will check their list-6 page to verify if the EGI has reset. The alignment status may read 00.0/9.9 if the EGI has reset.

8.1.3.4.6.2. **(Added-AVIANOAB)** Check the HSI, ADI, and HUD for proper movement and heading alignment when taxiing and taking the runway for takeoff.

8.1.3.5. **(Added-AVIANOAB)** Taxi Procedures.

8.1.3.5.1. **(Added-AVIANOAB)** Pilots will check ATIS prior to taxi.

8.1.3.5.2. **(Added-AVIANOAB)** Minimum taxi interval is 150' staggered during daytime, dry runway operations on taxiways Alpha and Bravo. Minimum taxi interval is 300' on centerline for wet runway, live ordnance, and/or night.

8.1.3.5.3. **(Added-AVIANOAB)** Maximum taxi speed is 25 knots; 10 knots in congested areas.

8.1.3.5.4. **(Added-AVIANOAB)** Due to parking limitations at Aviano, pilots should taxi with extreme caution. Do not taxi aircraft within 25 feet of obstructions without a wing walker. Never taxi aircraft within 10 feet of any obstruction. Pilots will not taxi behind other aircraft parked in the Arm/De-Arm Area of Sierra Loop (Buzzard Arm/De-arm Pad). Pilots will not taxi behind or in front of aircraft parked in the Buzzard Marshall Area.

8.1.3.5.5. **(Added-AVIANOAB)** Conditions permitting, pilots will not point a parked jet with forward firing ordnance at any PAS, aircraft, or personnel.

8.1.3.6. **(Added-AVIANOAB)** Ground Radio Procedures.

8.1.3.6.1. **(Added-AVIANOAB)** Engine Start. Flight leads will notify ground control of engine start in order to activate their flight plan. "Aviano Ground, Viper 01, engine start."

8.1.3.6.2. **(Added-AVIANOAB)** Taxi request. "Aviano Ground, Viper 01, taxi (number of aircraft), (location), with (ATIS identifier), IFR/VFR to (airspace

assigned).” Expect response using ICAO phraseology: “Taxi to holding point, runway [number], time[as required], hold short of runway.”

8.1.3.6.3. **(Added-AVIANOAB)** Clearance. Ground Control is also Clearance Delivery; expect clearance to be passed approximately 10 minutes prior to departure time. Pilots will notify Ground control when they are 10 minutes from departure. Pilots will read back clearance verbatim.

8.1.3.7. **(Added-AVIANOAB)** Arming/De-arming. Normal arming/de-arming will take place in a unit designated area (Reference Attachment 6).

8.1.3.8. **(Added-AVIANOAB)** Day-Time Lighting Requirements. Per AFI 11-218 and AFI 11-202V3, the minimum aircraft lighting required for daytime F-16 operations is the anti-collision strobe light (top of tail). Any other external lighting found to be non-operational after engine start will be Code 2 upon landing. In the event the anti-collision strobe light fails in flight or during a cross-country/deployment movement, the PIC may continue the mission to the first stop where repairs can be made (IAW AFI 11-202V3).

8.1.3.9. **(Added-AVIANOAB)** Night-Time Lighting Requirements. All interior instrument lights must be operational. All exterior lights must be operational with the exception of a maximum of one inop wingtip light per wing. The AAR lights must be operational if air refueling is planned. The anti-collision knob will be placed in position 1 when operating in Norm on the ground. Set respective flight position (C, 2, 3, 4) prior to takeoff.

8.1.3.9.1. **(Added-AVIANOAB)** Pilots will remain “bright-flash, strobe on, taxi light off” anytime they are stopped on the north/south parallel taxiways. Exception: if dearming on the parallel taxiways prior to hot pit refueling.

8.1.3.9.2. **(Added-AVIANOAB)** Reduced Lighting Operations: In Italian restricted airspace (Zita, Sara, Lola, and Foligno), as well Speedy airspace, the minimum exterior lighting is covert all, dim/steady. Pilots may run “blacked out” to meet specific training requirements. Time blacked out should be kept to a minimum. Overt lighting will be used enroute to/from training airspace.

8.1.3.10. **(Added-AVIANOAB)** Wet/Dry Runway.

8.1.3.10.1. **(Added-AVIANOAB)** After landing, pass runway braking action to Tower, if braking action is other than expected or reported. Report conditions using standard terminology:

Table 8.2. (Added-AVIANOAB) Standard Terminology

RCR	Braking Action	% Increase in Landing Roll
19-25	“Good”	15-0
13-18	“Fair”	45-16
06-12	“Poor”	99-46
02-05	“Nil”	100 or more

8.1.3.10.2. **(Added-AVIANOAB)** AMOPS determines runway condition (wet or dry). If the runway is declared "wet", the SOF will determine the presence of "standing water" for formation takeoffs.

8.1.3.10.3. **(Added-AVIANOAB)** Wet friction values for the runway are "Good", however pilots are advised that friction values will be reduced for an extended period after rain.

8.1.3.11. **(Added-AVIANOAB)** FOD Prevention Procedures.

8.1.3.11.1. **(Added-AVIANOAB)** Local conditions including substandard pavement, heavy traffic, and heavy rains, make FOD prevention at Aviano AB particularly challenging. Everyone on the flight line is responsible for ensuring all airfield ramp, taxi, and runway surfaces are clear of FOD.

8.1.3.11.2. **(Added-AVIANOAB)** The following procedures will be used when reporting FOD:

8.1.3.11.2.1. **(Added-AVIANOAB)** Pilots will report FOD to ground/tower controller. Runway remaining markers may be used to help describe the location accurately for FOD located on taxi ways Alpha or Bravo. For example, "Ground, Viper 1, FOD Report, Westbound, Taxiway Alpha, abeam six board, 2 feet south of centerline, [FOD type: rocks, debris, acorns, etc.]" "Abeam six board" means the aircraft is abeam the six thousand feet remaining marker; use distances in .1 increments to refine position (i.e. "5.3 board" means abeam 5300' runway remaining point in direction stated (westbound or eastbound)).

8.1.3.11.2.2. **(Added-AVIANOAB)** Ground control will record the FOD report, ensure the FOD information is passed to other factor ground traffic, pass the FOD report to AMOPS, and coordinate for a sweeper if required. AMOPS is responsible for physically removing the FOD and is responsible for FOD tracking and reporting to the OG/CC.

8.1.3.11.2.3. **(Added-AVIANOAB)** The SOF will ensure the above procedures are complied with in a timely manner. The SOF will annotate, on the SOF EOD report, any significant FOD found during the opening airfield inspection. This report will also be sent to AMOPS for FOD tracking.

8.1.4. Section D. Flying Operations.

8.1.4.1. **(Added-AVIANOAB)** Local Flying Area (Reference Attachment 13).

8.1.4.1.1. **(Added-AVIANOAB)** The Aviano local flying area is northeastern Italy east of 9° East and north of 42° North.

8.1.4.1.2. **(Added-AVIANOAB)** Use of airspace in Italy is subject to restrictions imposed by controlled airspace, danger, restricted, and prohibited areas. VFR flight must be carefully planned IAW FLIP, GP, AP/2, AP2A, Italian AIP (MILAIP) and NOTAMs. Reference the low-level operational air traffic manual (BOAT Vol 2) for low-level rules.

8.1.4.1.3. **(Added-AVIANOAB)** There are numerous firing areas in Italy. Firing areas (FRAs) are NOTAMed active in the daily ITAF NOTAMs located on the w:

drive. IAW the ITAF MILAIP, all activated FRAs must be avoided by 2,000' above the upper limit of the published altitudes, unless specified otherwise.

8.1.4.1.4. **(Added-AVIANOAB)** 31 FW working areas are listed in Area Planning Special Use Airspace (AP/2A) and MILAIP.

8.1.4.1.5. **(Added-AVIANOAB)** SARA (LIR21), FOLIGNO (LIR48), ZITA (LIR49), LOLA (LIR65), and LIR103 are restricted areas. Civilian traffic is prohibited from entering these areas unless cleared by ATC. However, 31 FW aircraft will remain VMC to the maximum extent possible.

8.1.4.1.6. **(Added-AVIANOAB)** Primo is authorized to provide advisory/broadcast service, IAW the Local Technical Arrangement (LTA), for Zita and Sara airspace. Primo will provide warnings of hazards affecting aircraft safety. However, pilots continue to be responsible for remaining inside the airspace and collision avoidance.

8.1.4.1.7. **(Added-AVIANOAB)** SPEEDY (LID113) is a special use area for NATO Operations. It encompass both Croatian (Zagreb ACC) and Italian FIRs. ATC is not obligated to prevent civilian traffic from entering these areas. 31 FW aircraft will remain VMC unless they are operating under an IFR clearance and are in contact with Padova or Primo. In addition, ATC is not required to inform inbound flights about or separate them from flights already working in SPEEDY. Therefore, inbound aircraft will announce their presence in the blind on both SPEEDY North and SPEEDY South primary frequencies prior to entering the airspace.

8.1.4.1.8. **(Added-AVIANOAB)** Padova Mil Operations. Italian SCCs, including Padova Mil, are responsible for the coordination of Operational Air Traffic (OAT) flight plans to and from the training areas. Padova Mil is also responsible for the coordination and deconfliction of SARA, LOLA, and ZITA airspaces. When Padova Mil is closed, SARA, LOLA, and ZITA do not exist. Therefore, 20 minutes prior to Padova Mil closing, all flights must coordinate for recovery from SARA and LOLA in order to be established within Aviano Airspace by closing time. SPEEDY and FOLIGNO remain open when Padova Mil is closed, but they require a General Air Traffic (GAT) flight plan for use.

8.1.4.1.9. **(Added-AVIANOAB)** Airspace Extensions. Pilots still on the ground will coordinate airspace extensions through Squadron Top 3s (primary) or the SOF (secondary). Once airborne, flights must coordinate with the appropriate controlling agency. The following is a list of the tactical training areas and their corresponding controlling agencies: ZITA (Padova Mil – SCC), LOLA (Padova Mil – SCC), SARA (Padova Mil – SCC), FOLIGNO (Roma Mil – SCC or Roma Control – ACC), SPEEDY (Padova Mil – scheduled by CAOC5, coordinated through Wing Scheduling).

8.1.4.1.10. **(Added-AVIANOAB)** Latecomer Procedures. Latecomer is defined as one or more elements of the flight unable to take off within formation, but with the same procedure of the original mission (i.e. route, timings/slot) already approved, in order to rejoin with the flight. If unable to takeoff with the flight, individual aircraft or elements may execute latecomer procedures. If any flight member plans to take

off outside of the +45 minute window, as defined in para. 8.1.2.4.6., an immediate must be filed. Aircraft wishing to invoke latecomer procedures will:

8.1.4.1.10.1. **(Added-AVIANOAB)** Contact tower requesting the activation of the latecomer flight plan with the new expected time of departure.

8.1.4.1.10.2. **(Added-AVIANOAB)** Renumber the flight as required to ensure aircraft executing latecomer procedures are the highest numbered flight members in the formation (i.e. #4 of a 4-ship).

8.1.4.1.10.3. **(Added-AVIANOAB)** Request approval by IT-AOC through ground.

8.1.4.1.10.4. **(Added-AVIANOAB)** Takeoff prior to remaining flight members actual land time.

8.1.4.1.10.4.1. **(Added-AVIANOAB)** If a latecomer is unable to takeoff prior to assigned airspace expiration time, the ITAF-BOC may not allow him to takeoff.

8.1.4.1.11. **(Added-AVIANOAB)** To ensure de-confliction between civil and military traffic, recovery from locally assigned airspace will be coordinated at least 5 minutes prior to RTB. Failure to provide this notification may result in significant delays. Flights will remain inside the confines of the working area until a clearance to depart is received from ATC. To the maximum extent possible, RTB as a two/four ship.

8.1.4.1.12. **(Added-AVIANOAB)** Coordinate non-standard recoveries as soon as possible with the controlling agency. Separate elements or flights recovering at the same time will deconflict recovery altitudes while remaining in the airspace. Each element or flight will coordinate a separate clearance with ATC.

8.1.4.1.13. **(Added-AVIANOAB)** La Comina Airstrip. This airstrip oriented N/S is located approximately 3.5 nm southeast of the departure end of runway 05. It is used by light aircraft, VFR only. These aircraft should not be any higher than 700' MSL and are required to stay east of the airstrip. The traffic is required to be in radio contact with Aviano tower. Aviano aircraft circling to land on RWY 23 pose a possible conflict, use caution. La Comina is authorized to conduct flying operations 7 days a week.

8.1.4.2. **(Added-AVIANOAB)** Noise Abatement. Noise complaints are a serious problem in the Aviano area. 31 FW pilots will comply with the following:

8.1.4.2.1. **(Added-AVIANOAB)** Noise Abatement procedure (RWY 05). 31 FW aircraft will execute the following procedures if weather is $\geq 5,000'$ /5 km:

8.1.4.2.1.1. **(Added-AVIANOAB)** Climb and maintain between 700' and 1,500' MSL until past departure end of runway. If using AB, pilots will select MIL power at 300 knots unless required for safety of flight, then:

8.1.4.2.1.2. **(Added-AVIANOAB)** Fly runway heading until 1 DME, then turn right to heading 065 to stay North of the town of San Foca. Cross 4 DME at or above 3,000' MSL and turn right to desired heading while remaining East of San

Foca tower. When active, avoid Cellina Meduna either laterally by completing the turn within 5 DME, or vertically by climbing above 6,000' MSL by 6 DME. Resume VFR/IFR departure as cleared. Pilots will maintain VMC throughout the procedure. Wingmen will fly the same ground track, and will not use cutoff to rejoin until southbound, past San Foca. This procedure is not authorized at night or when weather is less than 5,000'/5 km.

8.1.4.2.2. **(Added-AVIANOAB)** Training sorties are conducted between 0800L and 2200L. Training sorties arriving between 2200L and 0800L or on weekends require OG/CC and ITAF/CC approval. All flights are required to perform a single straight-in approach/full stop weekdays from 2200L - 0730L, weekends, and Italian holidays.

8.1.4.2.3. **(Added-AVIANOAB)** Supersonic Flight. Supersonic flight is allowed over international waters with the following requirements met:

8.1.4.2.3.1. **(Added-AVIANOAB)** Maintain > 12nm from the coastline with a diverging route of at least 20 degrees from the coast

8.1.4.2.3.2. **(Added-AVIANOAB)** Maintain > 35nm from the coastline if the route runs toward or does not diverge at least 20 degrees from the coast

8.1.4.2.3.3. **(Added-AVIANOAB)** Maintain VMC with at least 10km visibility

8.1.4.2.3.4. **(Added-AVIANOAB)** Have functional navigation equipment

8.1.4.2.3.5. **(Added-AVIANOAB)** Maintain above 500' AGL

8.1.4.2.3.6. **(Added-AVIANOAB)** Avoid areas outlined in MILAIP

8.1.4.2.3.7. **(Added-AVIANOAB)** Airspeed above .95 mach is prohibited over the Italian National Territory and National Waters (less than 12 nm from the coast) unless ALL of the following requirements are met:

8.1.4.2.3.7.1. **(Added-AVIANOAB)** Specifically approved for supersonic run by Italian Air Defense and can maintain radar and radio contact with Italian Air Defense controllers.

8.1.4.2.3.7.2. **(Added-AVIANOAB)** Maintain above FL 360

8.1.4.2.3.7.3. **(Added-AVIANOAB)** Maintain outside of sensitive areas (reference MILAIP)

8.1.4.2.3.7.4. **(Added-AVIANOAB)** Maintain outside of the Alps region (reference MILAIP)

8.1.4.2.3.7.5. **(Added-AVIANOAB)** Monday – Friday between the hours of 0900-2000 excluding holidays

8.1.4.2.4. **(Added-AVIANOAB)** Supersonic Flight Documentation. All supersonic flights over Italian National Territory (intentional and un-intentional) must be documented on a Supersonic Flight Report and AF Form 121 (copies can be obtained from the 31 OSS/OSOS web site). Completed supersonic Flight Reports will be forwarded to 31 OSS/OSOS who will provide copies to Airfield Management and the Italian BOC. The squadron is responsible for filling out the Supersonic Flight Report

and the AF Form 121 (see Attachments 15 & 16). Complete procedures can be found at the Squadron's Aviation Resource Management section.

8.1.4.2.4.1. **(Added-AVIANOAB)** All pilots are responsible for maintaining SA on their airspeed at all times and adapting tactical scenarios as required to stay \leq .95 Mach. In case of supersonic flight over the Italian landmass (including FCFs), pilot responsibilities are as follows:

8.1.4.2.4.1.1. **(Added-AVIANOAB)** If supersonic activity is detected airborne, notify the controlling agency ASAP with best available coordinates, duration, and flight level. FS/Top 3 and FS/DO will be notified immediately upon landing.

8.1.4.2.4.1.2. **(Added-AVIANOAB)** If supersonic activity is detected in debrief, notify FS/Top 3 and FS/DO immediately. Top 3 is responsible for ensuring the pilot completes the required forms, SARMs receive the forms for routing IAW the *31 OG Standard Operating Procedure for Sonic Boom* (see Attachment 14), and will call the OG/CC with details of the supersonic event upon RMC review.

8.1.4.2.4.1.3. **(Added-AVIANOAB)** In all cases, pilots will complete the AF Form 121 (Sonic Boom Log) and Italian Supersonic Flight Report. Pilots will use RMC and/or URITS data to accurately assess time, location, and duration of supersonic flight when filling out the required forms. The RMC will be kept for a minimum of 7 days (pilots may save the RMC to a file).

8.1.4.2.5. **(Added-AVIANOAB)** Afterburner is prohibited below 2,000' AGL except for takeoffs, emergencies, or safety of flight.

8.1.4.2.6. **(Added-AVIANOAB)** Do not overfly Pordenone/Cordenons below 3,000' MSL or Sacile below 2,500' MSL unless on final.

8.1.4.3. **(Added-AVIANOAB)** Takeoffs.

8.1.4.3.1. **(Added-AVIANOAB)** Advise tower if planning a non-standard departure or if excessive time on the runway is required. Expect ICAO phraseology for taxi into position and hold: "Viper 01, line up and wait." Discontinue afterburner at 300 KIAS unless safety of flight dictates otherwise.

8.1.4.3.2. **(Added-AVIANOAB)** For bird strike avoidance, turn landing light on when taking the active.

8.1.4.3.3. **(Added-AVIANOAB)** Unrestricted Climbs. Minimum airspeed prior to pulling vertical is 400 knots (A/A configured) and 450 knots (A/G configured). Maximum climb angle is 70 degrees (A/G). Minimum recovery airspeeds are 200 KIAS (A/A) and 250 KIAS (A/G).

8.1.4.4. **(Added-AVIANOAB)** VFR Departures.

8.1.4.4.1. **(Added-AVIANOAB)** RWY 05: Pilots will fly the noise abatement procedure if weather allows (see para. 8.1.4.2.1.). If weather does not permit a noise abatement departure, but still permits a VFR departure (1500'/5km), then on departure climb and maintain between 700' and 1500' MSL until past departure end, fly runway

heading until 2 DME, then turn right to 180° direct to EAGLE, completing turn within 5 DME. Resume VFR departure as cleared and maintain VMC (Reference Attachment 9).

8.1.4.4.2. **(Added-AVIANOAB)** RWY 23: Maintain between 700' and 1,500' MSL until past departure end, then climb to 3500' MSL or higher and turn left to FALCO. Expedite climb to 3,500' MSL or above. Avoid the towns of Vigonovo and Sacile (Reference Attachment 10).

8.1.4.4.3. **(Added-AVIANOAB)** VFR Entry/Exit Points. Point Eagle (AVI 141/10 or N45 53.499 E012 44.105, Elev: 49') is a intersection of an aqueduct and Autostrada 28, just northeast of Azzano Decimo. Point Falco (AVI 203/13 or N4549.837 E1227.882, Elev: 62') is a bridge over a river.

8.1.4.5. **(Added-AVIANOAB)** IFR Departures.

8.1.4.5.1. **(Added-AVIANOAB)** File SIDs for all IFR departures. Aviano has seven DOD published SIDs compatible with the F-16: Risom 1A/B, Adriatica 1, Vicenza 6, Roska 1L/M, Tibro 1L/M, CHI 1L/M, and Chioggia 7.

8.1.4.5.2. **(Added-AVIANOAB)** Radar assisted trail (RWY 05). (Note: If the weather is greater than 5,000'/5 km execute the Noise Abatement Procedures, para 8.1.4.2.1.)

8.1.4.5.2.1. **(Added-AVIANOAB)** Maintain MIL or AB takeoff power as required until 300 KIAS, MIL power until 350 KIAS, then maintain 350 KIAS with 750° FTIT (A-A) or 800° FTIT (A-G).

8.1.4.5.2.2. **(Added-AVIANOAB)** Trail members maintain 2-3 nm spacing.

8.1.4.5.2.3. **(Added-AVIANOAB)** Caution: The Risom 1A departure (Runway 5) requires a 10-degree climb to clear Cellina Meduna Range by 1,500' (6,000' MSL at 6 DME) and arrive at Risom at FL 130. High gross weights combined with high OAT will likely require non-standard power settings during trail departures.

8.1.4.5.3. **(Added-AVIANOAB)** Risom Departure. Fly the departure as depicted. If cleared off of the Risom departure (i.e. direct to Roska) use maximum of 30 degrees bank angle enroute to cleared point and ensure altitude restriction over Cellina Meduna is met (6,000' MSL at 6 DME).

8.1.4.5.4. **(Added-AVIANOAB)** Other than Risom Departure. Climb runway heading until 2.0 DME. At 2.0 DME (not earlier than 1,400 ft MSL at night or when the weather is below 1,500'/5 km) initiate a climbing turn to the specified SID heading/track. Complete the turn within 5 DME of AVI TACAN to avoid Cellina Meduna Range.

8.1.4.5.5. **(Added-AVIANOAB)** When departing IFR in a non-standard formation, flight members will squawk mode C and mode 3 in sequence. For example, if the flight lead squawks 6131, #2 will squawk 6132, #3 6133, etc., until rejoined to a standard formation.

8.1.4.6. **(Added-AVIANOAB)** Zita De-confliction Procedures.

8.1.4.6.1. **(Added-AVIANOAB)** 31 FW aircraft will not “cancel” upon entering Zita airspace, and are therefore on an IFR flight plan in Restricted airspace. Therefore, pilots are authorized to transit IMC while searching for VMC and deconflicting from other 31 FW aircraft via UHF 16 while utilizing Zita airspace. Flights will utilize FL130 to the maximum extent possible as a *Zita transit altitude* to and from Aviano. All established Zita traffic will maintain FL140 and above unless positive lateral deconfliction has been established.

8.1.4.6.2. **(Added-AVIANOAB)** Zita Entry. The first flight on departure to Zita airspace (making Zita “engaged”) should expect a clearance from ATC to climb to an altitude within the assigned Zita airspace. The flight lead will call “established Zita airspace, request tactical” once all flight members are established within the vertical confines of the airspace (\geq FL130). Pilots must be aware that once they declare “established”, they are responsible for their own separation while operating in Zita airspace (similar to MARSA in the states). All subsequent flights proceeding to Zita will be cleared to FL130. Additionally, as a reminder to subsequent aircraft, the tower controller will add “Zita engaged” to their clearance any time Zita is currently active. For flights using the same Zita slot time, flight leads will deconflict their entry into the airspace, preferably pre-briefed with other Zita flights, or via Zita airspace tactical frequency (UHF 16). Unless deconfliction is pre-briefed, all flights not utilizing the *same* Zita slot time (i.e. 555 FS users have slot time following 510 FS) will coordinate on Zita common (UHF 16) *prior* to take-off to deconflict entry/exits from current users (i.e. activate Zita transit altitude).

8.1.4.6.3. **(Added-AVIANOAB)** Zita Exit. On recovery, aircraft will transit Zita airspace at FL130, or at another altitude deconflicted from other Zita traffic, until established in the Aviano RAPCON airspace (within Zita South airspace) and in radio contact with Aviano Approach. Pilots are responsible for deconfliction from other Zita traffic until “radar contact” and issued radar vectors or other ATC instructions (i.e. “proceed direct to Risom/Silva/Penny/Falco”). On initial contact with Aviano Approach, flight leads will add “clear of Zita traffic” in addition to their initial arrival radio call. ATC will expedite clearing the flight to descend below FL130 in order to minimize time at FL130 while not on UHF 16.

8.1.4.7. **(Added-AVIANOAB)** VFR arrivals.

8.1.4.7.1. **(Added-AVIANOAB)** Contact Aviano Approach with intentions approaching Aviano airspace. On initial contact with Aviano, respond with number of aircraft, position from Aviano, ATIS code, and intentions, “Viper 01, 4-ship, 30 miles south of Aviano, with Alpha, Falco for Initial.” Pilots will remain on approach frequency for traffic advisories and not switch to tower frequency until crossing point Falco/Eagle.

8.1.4.7.2. **(Added-AVIANOAB)** RWY 05 (Reference Attachment 9).

8.1.4.7.2.1. **(Added-AVIANOAB)** The VFR entry point is Falco. When cleared by ATC, depart Falco heading 320° at 3,500’ MSL until aligned with the runway. Avoid Sacile by offsetting to the north as safety allows. At 7 DME, begin descent to 2,000’ MSL. Arrive at 2,000’ MSL by 3 DME. Initial altitude is 2,000’ MSL with a north break for a left base to RWY 05.

8.1.4.7.2.2. **(Added-AVIANOAB)** If required, re-enter to initial via the VMC Noise Abatement Procedure to point Eagle at 3,500' MSL, then to point Falco. Example: "Viper 01, Re-enter Eagle."

8.1.4.7.2.3. **(Added-AVIANOAB)** VFR straight-ins to RWY 05 will not descend to 2,000' MSL until turning to extended final. Clear for radar traffic at or above 2,000' MSL.

8.1.4.7.2.4. **(Added-AVIANOAB)** VFR aircraft may depart Falco as low as 2,500' MSL when the ceiling is greater than or equal to 3,000' MSL but less than 4,000' MSL. Coordinate with ATC prior to descending to 2,500' MSL at Falco.

8.1.4.7.2.4.1. **(Added-AVIANOAB)** Use the same procedures as Rwy 05, except make a left turn at 5 DME, followed by a right turn to inside downwind. Do not overfly the base during the inbound portion of the recovery, until north of the extended runway centerline.

8.1.4.7.2.4.2. **(Added-AVIANOAB)** Re-enter via Eagle at 3,500' MSL, then follow Rwy 23 VFR entry procedures.

8.1.4.7.2.5. **(Added-AVIANOAB)** Grappa Recovery (Reference Attachment 11).

8.1.4.7.2.5.1. **(Added-AVIANOAB)** Request with desired altitude on initial contact with Aviano Approach, "Viper 01, 4-ship, 20 miles south of Aviano with Alpha, Grappa Recovery, 10,000."

8.1.4.7.2.5.2. **(Added-AVIANOAB)** Depart Penny in the block 5,000'-10,000' MSL, or as cleared, direct Aviano. At 5 DME (AVI 164/5), turn right towards the outside of the departure end of the runway, begin descent, maintain at or above 2,500' MSL, and avoid over flight of the base until crossing runway centerline. Then turn left to arrive on inside downwind at 2,000' MSL for a normal overhead pattern. Wingmen will maintain line abreast formation until taking spacing in the left turn to downwind. Minimum weather required is 6,000'/8 km visibility.

8.1.4.7.2.5.3. **(Added-AVIANOAB)** Restrictions: Day-only. Maximum airspeed is 400 KCAS. Wingmen will maintain a maximum of 6,000' spacing from element lead. When recovering in a formation larger than a two-ship, ensure elements do not exceed two aircraft in order to avoid conflicts with aircraft on departure. Do not overfly the base during the inbound portion of the recovery.

8.1.4.7.2.5.4. **(Added-AVIANOAB)** If the field is not in sight by 5 DME or directed to breakout while northbound, execute a right turn at 3,500' MSL and re-enter via Eagle then Falco and contact Aviano Approach. For traffic deconfliction on initial, final, or inside downwind, maintain at or above 2,500' MSL and re-enter via High Downwind Re-Entry.

8.1.4.7.2.5.5. **(Added-AVIANOAB)** The overhead SFO pattern is an inherent conflict with Grappa operations. Tower controllers may deny the concurrent execution of overhead SFOs and Grappa recoveries. The straight-

in SFO holding pattern is deconflicted from Grappa recoveries to RWY 05.

8.1.4.7.3. **(Added-AVIANOAB)** RWY 23 (Reference Attachment 10).

8.1.4.7.3.1. **(Added-AVIANOAB)** Entry point is Eagle. When cleared by tower, depart point Eagle heading 015° at 2,500' MSL. Turn to parallel the dry river bed. Turn to initial around the second red striped tower at the edge of San Foca, then descend to 2,000' MSL. Initial altitude is 2,000' MSL with a north break for a right base to RWY 23.

8.1.4.7.3.2. **(Added-AVIANOAB)** Reentry to initial via Falco then Eagle. Maintain between 700' and 1,500' MSL until departure end, turn left direct Falco, climb to 3,500' MSL. Avoid the towns of Sacile and Vigonovo. Example: "Viper 01, Re-enter Falco."

8.1.4.7.3.3. **(Added-AVIANOAB)** Do not fly practice VFR straight-in patterns to RWY 23. If an emergency straight-in is required, the ground track is the same as if proceeding to initial. Depart Eagle at 1,500' MSL.

8.1.4.7.3.4. **(Added-AVIANOAB)** Grappa Recovery (Reference Attachment 11).

8.1.4.7.4. **(Added-AVIANOAB)** Tactical Initials. Authorized to RWY 05 only. Tactical Initial airspeed is 400 KIAS. Element leads will fly over the runway with wingman 6,000' line abreast to the south. Tactical initials are prohibited during vault operations (31 FW SOF will advise via ATIS).

8.1.4.7.5. **(Added-AVIANOAB)** High Downwind Re-Entry (Reference Attachment 9). Tower may approve a high downwind re-entry if pattern spacing does not allow a closed pattern. Example: "Viper 01, Re-enter High Downwind."

8.1.4.7.5.1. **(Added-AVIANOAB)** Turn to the north, climbing to 2,500' MSL and then turn to intercept a 3 DME initial descending back to 2,000' MSL. Remain within 5 nm of the field.

8.1.4.7.5.2. **(Added-AVIANOAB)** Pilots may request high downwind for an XX nm straight-in if a straight-in approach is desired. Climb to 2,500' MSL and proceed to the requested nm when cleared by tower. Begin a descent to 2,000' MSL turning left base for extended final. Clear for radar and VFR pattern traffic at or above 2,000' MSL. Example: "Viper 01, Re-enter High Downwind for 7nm Straight-In."

8.1.4.7.6. **(Added-AVIANOAB)** Low approaches. Cross departure end below 1,500' MSL. Request closed, SFO, High Downwind reentry or reentry via point Eagle/Falco.

8.1.4.7.7. **(Added-AVIANOAB)** Chase Procedures. Chase aircraft will offset no further south than Bravo taxiway.

8.1.4.8. **(Added-AVIANOAB)** SFO Procedures and Restrictions.

8.1.4.8.1. **(Added-AVIANOAB)** SFOs may only be accomplished at locations with an ATC memorandum of agreement and published procedures. In USAFE, current memorandums and procedures exist for Aviano, Spandgdahlem, and Incirlik.

8.1.4.8.2. **(Added-AVIANOAB)** Local SFO Procedures (Reference Attachment 12). Coordinate with ATC and/or Tower on initial contact with requested altitude. For an overhead SFO, “Aviano Tower, Cobra 01, approaching Falco, (straight in) SFO on request, 10,000’.” Once told to report High Key, climb to high key altitude while following the normal initial ground track.

8.1.4.8.2.1. **(Added-AVIANOAB)** Assumed High Key altitude is 10,000’ MSL unless otherwise coordinated with ATC.

8.1.4.8.2.2. **(Added-AVIANOAB)** Hold at high key following the ground track of the intended SFO pattern. Use a right hand holding pattern for RWY 05 and a left hand holding pattern for RWY 23. Pilots will state their altitude when directed to hold. Successive aircraft en-route to high key will de-conflict by 1,000’.

8.1.4.8.2.3. **(Added-AVIANOAB)** Weather required for all SFO patterns is day, VMC, 8 km visibility.

8.1.4.8.2.4. **(Added-AVIANOAB)** Pilots will maintain VMC cloud clearance requirements for all SFO patterns.

8.1.4.8.2.5. **(Added-AVIANOAB)** Overhead SFOs will be accomplished in 4-ship formations maximum.

8.1.4.8.2.6. **(Added-AVIANOAB)** “Random Entry” SFOs are approved with prior coordination and traffic permitting.

8.1.4.8.2.7. **(Added-AVIANOAB)** Overhead SFO from Falco/Eagle. The SFO pattern is a 360° descending turn to the south. Report “High Key”, “Low Key”, and “Base Key gear down low approach.”

8.1.4.8.2.8. **(Added-AVIANOAB)** Overhead SFO from low-approach. Climb to High Key via a climbing 360° turn to the north. For Runway 05 only, remain within 3nm, and do not start the turn south, back towards High Key until at or above 5500 MSL, due to straight-in SFO deconfliction.

8.1.4.8.2.9. **(Added-AVIANOAB)** If weather does not allow a high key entry, request the SFO at low key using the same ground track. The lowest altitude that may be requested for low key is 3,500’ MSL.

8.1.4.8.2.10. **(Added-AVIANOAB)** Straight-in SFO. Coordinate altitudes with Approach and/or Tower.

8.1.4.8.2.10.1. **(Added-AVIANOAB)** Straight-In SFOs may only be flown to RWY 05.

8.1.4.8.2.10.2. **(Added-AVIANOAB)** Depart Falco at coordinated altitude following normal initial ground track. Report “5 mile straight-in SFO, gear down, low approach” at 5 nm on final.

8.1.4.8.2.10.3. **(Added-AVIANOAB)** Hold for a straight-in SFO from 10 nm to 5 nm aligned with the runway inbound, left turns. Pilots will state their altitude when directed to hold.

8.1.4.8.2.10.4. **(Added-AVIANOAB)** "Re-enter Straight-In SFO" is a turn to the north and a climb to the coordinated altitude. Maintain 2,500' MSL until cleared to climb to SFO altitude by Tower. Proceed to 10 nm, turn left back towards the airfield, and report "10 mile" and "5 mile straight-in SFO." Example: "Viper 01, Re-enter Straight-In SFO." "Viper 01, 10-mile Straight-in SFO." "Viper 01, 5-mile Straight-in SFO, Gear Down, Low Approach."

8.1.4.9. **(Added-AVIANOAB)** IFR Arrivals.

8.1.4.9.1. **(Added-AVIANOAB)** IFR inbound traffic should expect 2 minutes between approaches. On initial contact with Aviano respond with number of aircraft, position from Aviano, ATIS code, and request. "Viper 01, 4-ship, 30 miles south of Aviano with Alpha, request."

8.1.4.9.2. **(Added-AVIANOAB)** All IFR approaches are to RWY 05. Fly circling approaches to RWY 23 to the south due to mountainous terrain north of the field. Radar monitoring is not available on TACAN final.

8.1.4.9.3. **(Added-AVIANOAB)** For all approaches originating at Penny (AVI 164/11) or when provided radar vectors to final, the maximum airspeed is 250 KIAS, unless otherwise requested.

8.1.4.9.4. **(Added-AVIANOAB)** If separate approaches are desired for wingmen, notify the controlling agency.

8.1.4.9.5. **(Added-AVIANOAB)** Lost communications procedures. If no transmissions are received for 30 seconds in the pattern attempt contact with Aviano Tower and proceed VFR. If unable to maintain VFR, maintain 3,000' until established on final and proceed with the ILS/TACAN approach RWY 05. Do not proceed north of the AVI 233 radial unless established on a segment of the approach due to rapidly rising terrain. If landing RWY 23, circle southeast of the runway for a left base to RWY 23.

8.1.4.10. **(Added-AVIANOAB)** Radar Trail Recovery Procedures

8.1.4.10.1. **(Added-AVIANOAB)** Radar trail recoveries will be flown IAW AFI 11-2F-16V3 and this supplement. Recoveries will normally be flown using the published ILS/DME RWY 05/TACAN RWY 05 penetration and approach.

8.1.4.10.2. **(Added-AVIANOAB)** Four-ship maximum for TACAN and ILS trail recoveries.

8.1.4.10.3. **(Added-AVIANOAB)** Pilots are responsible for gaining and maintaining aircraft/element spacing of 1.5 – 2 nm. Do not utilize S-turns on final to gain spacing behind previous aircraft. Spacing will be achieved utilizing briefed airspeeds and ranges from the destination field. Pilots must strictly adhere to published instrument procedures to maintain spacing.

8.1.4.10.4. **(Added-AVIANOAB)** After splitting into a non-standard formation, trail aircraft will squawk mode 3/C in sequence.

8.1.4.10.5. **(Added-AVIANOAB)** All changes in airspeed/configuration are called by the flight lead and mirrored by the flight members. The standard airspeed contracts are 300 KIAS until contact with arrival and on radar vectors, 250 KIAS until 9 DME, 180 KIAS until 3 DME final, and then final approach speed.

8.1.4.10.5.1. **(Added-AVIANOAB)** Communication procedures: When configuring, flight leads will use the format of: "C/S, config, local altimeter" (i.e. "Nickel 01, config, 29.87") to communicate a change in configuration and airspeed. Flight members will acknowledge in sequence, lower their gear and slow to 180 KIAS. At 3 DME flight leads will transmit, "C/S, final approach speed." All flight members will acknowledge in sequence and slow to final approach speed.

8.1.4.10.6. **(Added-AVIANOAB)** If an aircraft loses radar contact the pilot will transmit, "Call sign, lost contact," and follow procedures in AFI 11-2F-16V3. If at any time spacing is in question, the affected wingman will inform the flight lead and execute missed approach procedures or, if able to maintain VFR, break out of the pattern and proceed to the appropriate VFR reentry point. In either case, inform the ATC controller.

8.1.4.10.7. **(Added-AVIANOAB)** If an aircraft is NORDO, the NORDO aircraft will squawk 7600 and continue the trail recovery. ATC will notify flight members and potential traffic of an aircraft squawking NORDO.

8.1.4.10.8. **(Added-AVIANOAB)** If an aircraft is NORDO, loses radar contact, and separation cannot be maintained visually, the NORDO aircraft will continue the approach and squawk 7700. Expect the rest of the flight to be vectored out of the way.

8.1.4.10.9. **(Added-AVIANOAB)** If ATC issues breakout or go around instructions, they are for the lead aircraft only, unless otherwise specified by the controller. If wingmen are going to stay with the flight lead, advise the controller.

8.1.4.10.10. **(Added-AVIANOAB)** For subsequent approaches the flight lead will coordinate the trail formation with ATC.

8.1.4.10.11. **(Added-AVIANOAB)** The flight lead will call all changes in airspeed/configuration and all flight members will match the airspeed/configuration simultaneously.

8.1.4.11. **(Added-AVIANOAB)** Approach and Landing Procedures.

8.1.4.11.1. **(Added-AVIANOAB)** Under normal circumstances, do not land with more than 5,000 pounds of fuel.

8.1.4.11.2. **(Added-AVIANOAB)** Reduced Same Runway Separation (RSRS) procedures are not authorized at Aviano AB. Full runway separation is required for aircraft in different formations.

8.1.4.11.2.1. **(Added-AVIANOAB)** Different formations are defined as:

8.1.4.11.2.1.1. **(Added-AVIANOAB)** Flights with different call signs (i.e. Nickel 01, Buzzard 01, etc).

8.1.4.11.2.1.2. **(Added-AVIANOAB)** Members of the same flight which have executed a flight split-up for practice approaches and have not reformed the formation.

8.1.4.11.2.2. **(Added-AVIANOAB)** Aircraft may rejoin as a formation anywhere in the pattern, with the exception of base and final legs, by requesting like callsign procedures. Approval to rejoin will be dependent on current traffic conditions, and must occur prior to a landing clearance being issued. Pilots will use the following phraseology to request like callsign procedures:

8.1.4.11.2.2.1. **(Added-AVIANOAB)** “Tower, Nickel 04 requests like callsign procedures with Nickel 01.”

8.1.4.11.2.2.2. **(Added-AVIANOAB)** Tower, Venom 01 requests like callsign procedures with Cobra 01.”

8.1.4.11.3. **(Added-AVIANOAB)** ICAO rules dictate that ATC controllers may not issue landing clearance until the previous aircraft (if that aircraft belongs to a different flight or is not assigned to the 31 FW) has crossed the runway threshold. This may result in delays in receiving clearance; pilots should expect to hear “continue” until the previous aircraft (subject to the restrictions above) crosses the threshold. This restriction also applies to members of the same flight after split-up (i.e. after the first pitchout to land/low approach).

8.1.4.12. **(Added-AVIANOAB)** Local Climbout. Applicable to RWY 05 only. For consecutive instrument approaches, approach will issue the following instructions or advise “Execute Local Climbout.” After low approach, touch and go, or missed approach, climb between 700’ and 1,500’ MSL until past departure end. If the weather is $\geq 5000'/5\text{km}$, fly the noise abatement procedure, followed by a turn to heading 180 and climb to maintain 3000’ MSL. If weather is $< 5000'/5\text{km}$, then maintain runway heading until 2 DME, then turn right to heading 180 and climb to maintain 3000’ MSL. Complete the turn within 5 DME to avoid Cellina Meduna controlled firing area.

8.1.4.13. **(Added-AVIANOAB)** IFF Procedures / Self Protection Procedures.

8.1.4.13.1. **(Added-AVIANOAB)** When over the Italian landmass, all flight members will squawk modes I, II, and IV. When within standard formation, the flight lead only will squawk Mode III and C. When nonstandard, all players will squawk all modes and codes.

8.1.4.13.2. **(Added-AVIANOAB)** Use of the ALE-47 training mode is authorized. If using airspace where chaff/flare use is authorized, the ALE-47 will remain in STBY until over water and at least 5 nm from land. All flight members will ensure they turn the ALE-47 off, or to STBY, at fence-out.

8.1.4.14. **(Added-AVIANOAB)** Low-Level Navigation.

8.1.4.14.1. **(Added-AVIANOAB)** Low-level flying in Italy is subject to specific rules, procedures, and limitations. These are published in Area Planning (AP/2), Italian Low-level Operational Air Traffic Flight Manual (Manuale BOAT), MILAIP, and Italian SMA 73. See Attachment 17, *31 FW Low-Level Procedures*, for additional guidance on conducting low-level training in Italy.

- 8.1.4.14.2. **(Added-AVIANOAB)** All U.S. military pilots (assigned, TDY, or guest pilots) must receive an Italian low-level brief from 31 OG/OGV prior to flying in the Italian low-level structure. All assigned pilots must take the Low Level test administered by OGV prior to flying low levels in Italy. The test is correctable to 100%.
- 8.1.4.14.3. **(Added-AVIANOAB)** Low-level flight over the Italian mainland must be specifically authorized by the Italian Air Staff (published on PVG or approved via “immediate flight plan”). Pilots will not request Marche Nord TA once airborne if not authorized by Italian Air Staff prior to takeoff.
- 8.1.4.14.4. **(Added-AVIANOAB)** Pilots flying low-level missions in central Europe (Germany, Belgium, Netherlands, France) will comply with the BIRDTAMS requirements in AFI 11-202V3_USAFESUP1, chapter 2. Additionally, ensure national low level procedures and restrictions are followed.
- 8.1.4.15. **(Added-AVIANOAB)** Night Minimum Altitudes. Minimum altitude at night is the MSA unless under positive IFR control from an ATC agency. Pilots who complete the NVG Low Altitude Qualification, IAW 31 OG Syllabus, are exempt from this restriction and may fly below the MSA during Hi Illum only (1,000’ AGL minimum).
- 8.1.4.15.1. **(Added-AVIANOAB)** Previous NVG Low Altitude Qualification from another F-16 assignment will be honored by the 31 OG; however, this qualification must be documented in the pilot’s gradebook.
- 8.1.4.16. **(Added-AVIANOAB)** G-Awareness. G-Awareness procedures and exercises will be IAW AFI 11-2F-16V3 and AFTTP 3-3V5.
- 8.1.4.17. **(Added-AVIANOAB)** Minimum Operational Equipment. In addition to the requirements in AFI 11-202V3, General Flight Rules, and Flight Information Publications (FLIP), the following equipment will be operative for all flights: TACAN, INS, IFF/SIF Modes 3A and C, Pitot/Angle-of-Attack Probe Heat, Standby Attitude Indicator, and Anti-G System. See paragraphs 8.1.3.8. and 8.1.3.9. for day and night lighting requirements.
- 8.1.5. Section E. Weapons Employment.
- 8.1.5.1. **(Added-AVIANOAB)** Prohibited Attacks. Do not perform simulated low altitude attacks on historical buildings, places of worship, or tourist areas. Avoid planning simulated low altitude attacks on populated areas. Do not simulate low altitude attacks on any target within city boundaries.
- 8.1.5.2. **(Added-AVIANOAB)** Laser Employment Modes (LANTIRN TGP).
- 8.1.5.2.1. **(Added-AVIANOAB)** During ground ops, pilots will ensure the laser is set to the green 1.54 micron setting. If found in the red 1.06 micron “combat” setting, pilots will inform maintenance and will not attempt to change the setting themselves.
- 8.1.5.2.2. **(Added-AVIANOAB)** Prior to firing the laser near any potentially populated areas, pilots will take an area track, shift the Sensor Point of Interest off of any populated areas and fire the laser. Pilots will ensure a “T” is located next to the flashing “L” in the TGP display. This will be accomplished each time the laser is “armed”.

8.1.5.2.3. **(Added-AVIANOAB)** If the “T” is not present during this test or any other time in flight, pilots will stow the targeting pod for the remainder of the mission, write up the aircraft “Code 3”, and inform both Top 3 and SOF.8.1.5.3. (Added) Hit Criteria. For Air-to-Ground missions, flight leads will ensure AFTTP 3-1 Hit Criteria is briefed during the mission brief.

8.1.6. Section F. Abnormal Procedures.

8.1.6.1. **(Added-AVIANOAB)** General. Procedures specified in this section and the *31 FW Pilot Aid* do not preclude the exercise of sound judgment in the interest of personnel safety or the safe recovery of an aircraft.

8.1.6.2. **(Added-AVIANOAB)** Emergency/SOF Procedures:

8.1.6.2.1. **(Added-AVIANOAB)** Declare an emergency anytime crash or fire equipment may be needed or the situation necessitates traffic priority. Time and conditions permitting, contact the SOF (UHF/VHF 20) for assistance with any aircraft malfunction or occurrence. At Aviano AB, emergency aircraft will utilize the in-flight emergency (IFE) Single Frequency Approach (SFA - UHF9) until termination of the emergency. Once the emergency aircraft has landed at Aviano AB, the Aviano Fire Chief is the authority for emergency termination.

8.1.6.2.2. **(Added-AVIANOAB)** When recovering with a “land as soon as practical” situation, reduce fuel weight below 5,000 pounds prior to landing if conditions allow and land with a chase ship unless the rejoin will result in a significant delay.

8.1.6.2.3. **(Added-AVIANOAB)** All landings at bases other than Aviano AB will be a two-ship minimum unless an emergency precludes subsequent landings.

8.1.6.2.4. **(Added-AVIANOAB)** Ground engine flameout procedures. In the event of an uncommanded ground flameout, do not reset any cockpit switches except to safe the EPU. Do not attempt to isolate the malfunction by recycling switch positions.

8.1.6.2.5. **(Added-AVIANOAB)** In the case of malfunctioning landing gear, have gear visually checked by another aircraft.

8.1.6.2.5.1. **(Added-AVIANOAB)** If no other aircraft is available, emergency aircraft with malfunctioning landing gear shall execute a 300’ AGL low approach between the runway and the south parallel taxiway to permit visual gear check by the SOF or tower.

8.1.6.2.5.2. **(Added-AVIANOAB)** Fuel and weather permitting, hold to allow other aircraft to land ahead of you.

8.1.6.2.5.3. **(Added-AVIANOAB)** Crash recovery personnel will meet the aircraft with landing gear pins. Stop straight ahead after landing and follow crash recovery crew instructions. Do not turn or taxi an aircraft with a known or suspected gear malfunction until the landing gear is pinned.

8.1.6.3. **(Added-AVIANOAB)** Fuel Burndown.

8.1.6.3.1. **(Added-AVIANOAB)** Engine related emergencies. Hold as required to maintain 1:1 to runway of intended landing.

8.1.6.3.2. **(Added-AVIANOAB)** Other emergencies. Pilots will use discretion on where to burn down fuel. Due to multiple noise sensitive areas in close proximity to Aviano AB, pilots should not plan to hold lower than 5K' AGL when burning down fuel. If intending to use afterburner during fuel burn down, pilots will coordinate with Padova for over water holding or with Aviano approach to hold in Zita airspace.

8.1.6.4. **(Added-AVIANOAB)** Barrier Engagements.

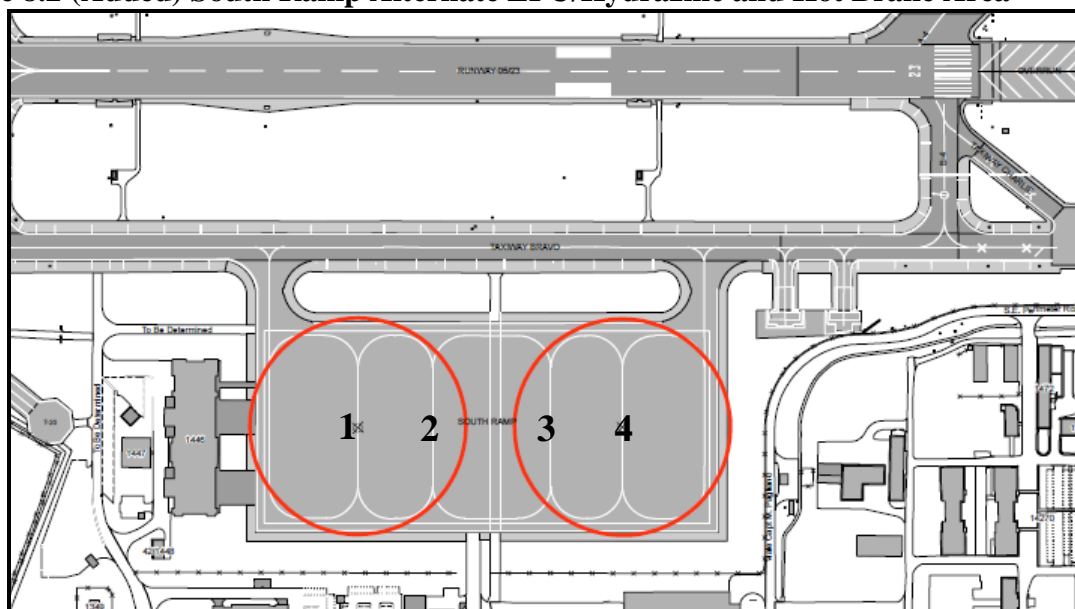
8.1.6.4.1. **(Added-AVIANOAB)** Pilots will advise the controlling agency as soon as possible if anticipating a barrier engagement. If the situation permits, the pilot will coordinate landing sequence, engagement, and missed engagement procedures with the SOF. Fire Department personnel are responsible for removing aircraft from the barriers and resetting the barriers. The barriers are connected and disconnected by barrier maintenance personnel who can connect any of the barriers in about 15 minutes.

8.1.6.4.2. **(Added-AVIANOAB)** CAUTION: Pilots should exercise caution when aborting takeoffs or during emergency landings to avoid unintentionally engaging the approach-end cable with the hook down. If an approach-end arrestment is not desired, delay putting the hook down until past the 6,000 feet runway remaining sign.

8.1.6.5. **(Added-AVIANOAB)** EPU Activation.

8.1.6.5.1. **(Added-AVIANOAB)** Hydrazine Procedures. F-16 aircrew with an activated EPU should advise the SOF as soon as practical and deal with the situation as the conditions warrant.

8.1.6.5.2. **(Added-AVIANOAB)** The primary activated EPU/Hydrazine area is taxiway Alpha 4 (Reference Attachment 5). Park with the left wing into the wind if able. Await emergency response crews (UHF 2 or 9). The alternate EPU/Hydrazine areas are the South Ramp and the Nickel Marshal/De-Arm Area (Reference Attachment 5). When using the South Ramp, prioritize parking in locations one and four in order to minimize effects due to a subsequent 300' cordon (Reference Figure 8.1).

Figure 8.2 (Added) South Ramp Alternate EPU/Hydrazine and Hot Brake Area

8.1.6.5.3. **(Added-AVIANOAB)** The fire department will chock the left main landing gear. After the aircraft is chocked, the pilot will turn the EPU off, then shut down the aircraft and egress to minimize exposure to hydrazine.

8.1.6.5.4. **(Added-AVIANOAB)** If recovering to another airfield, ensure the aircraft is recovered to an isolated parking area, then comply with the same procedures above (if the host base is able to chock the left main gear). If unable to have the aircraft chocked, the pilot will select the parking brake and turn off the EPU, then shut down and egress the aircraft to minimize exposure. EPU/Hydrazine procedures are listed in the *31 FW Pilot Aid*.

8.1.6.6. **(Added-AVIANOAB)** Hot Brakes.

8.1.6.6.1. **(Added-AVIANOAB)** The primary Hot Brake area is taxiway Alpha 4 (Reference Attachment 5). Do not taxi into the loops if hot brakes are suspected or confirmed. Proceed to the primary hot brake area. The alternate Hot Brake areas are the South Ramp and the Nickel Marshal/De-Arm Area (Reference Attachment 5). When using the South Ramp, prioritize parking in locations one and four in order to minimize effects due to a subsequent 300' cordon (Reference Figure 8.2).

8.1.6.6.2. **(Added-AVIANOAB)** The following procedures apply only to 31 FW F-16s. Aviano personnel should not declare hot brakes for transient aircraft.

8.1.6.6.2.1. **(Added-AVIANOAB)** During F-16 operations, the following situations may lead to hot brakes:

8.1.6.6.2.1.1. **(Added-AVIANOAB)** Aborting greater than 120 knots.

8.1.6.6.2.1.2. **(Added-AVIANOAB)** Abnormal landings (heavy/fast, engine in SEC, early brake application, etc) that cause the brake energy limits to reach the caution or danger zone per the brake energy chart in T.O. 1F-16CM-

1-1.

8.1.6.6.2.1.3. **(Added-AVIANOAB)** Ground crew reports indications of hot brakes (glowing, smoke, fire, etc).

8.1.6.6.2.1.4. **(Added-AVIANOAB)** Tires deflate (wheel fusible plugs blown).

8.1.6.6.2.2. **(Added-AVIANOAB)** If hot brakes are suspected or confirmed, the supervisor of flying (SOF) will declare a ground emergency unless already declared. Once a hot brake emergency is declared, the Incident Commander will establish a cordon around the aircraft. Under normal circumstances, the cordon will remain in effect for 45 minutes to allow for the brakes to cool below a temperature safe for maintenance personnel to approach and test the temperature of the brakes.

8.1.6.6.2.2.1. **(Added-AVIANOAB)** In situations where clearing the runway or moving the aircraft is the highest priority (impending diverts, another emergency aircraft inbound, etc), 31 MXS personnel may enter the cordon sooner than 45 minutes to ascertain the status of the brakes. The authority to enter the cordon prior to the expiration of the planned 45-minute wait period resides with the 31 FW/CC. The 31 FW/CC has delegated this authority to the 31 OG/CC or his designated representative (no lower than the squadron commander level).

8.1.6.6.2.2.2. **(Added-AVIANOAB)** To prepare for situations where 31 FW leadership determines reopening the runway is a higher priority, the Incident Commander will keep Crash Recovery postured for entry into the incident cordon before the 45-minute wait period.

8.1.6.6.2.3. **(Added-AVIANOAB)** If the pilot suspects hot brakes on landing, the pilot should proceed to the hot brake area. If unable to proceed to the hot brake area, pilots will attempt to pull at least 300 feet away from the runway to prevent closing the runway.

8.1.6.6.2.4. **(Added-AVIANOAB)** If the pilot suspects hot brakes in a congested area, the pilot should consider taxiing to clear the area. If the aircraft remains in a congested area, all personnel and other aircraft should attempt to evacuate more than 300 feet away from the affected aircraft.

8.1.6.6.2.5. **(Added-AVIANOAB)** If a hot brakes emergency was declared but circumstances reveal that the aircraft does not have hot brakes (ie the SOF determines the aircraft was not in the caution/danger zone according to the Brake Energy Limits chart), the SOF may coordinate with the Incident Commander to cancel the emergency. If 31 MXG Crash Recovery determines the brakes are not hot, barring any other issues with the aircraft, the Incident Commander will terminate the ground emergency and give the aircraft back to maintenance or release the pilot to taxi.

8.1.6.7. **(Added-AVIANOAB)** Aircraft Recall. 31 FW aircraft will be recalled via GUARD in the clear. Upon notification, pilots will contact the SOF and pass fuel remaining in minutes.

8.1.6.8. **(Added-AVIANOAB)** Approach/Landing Requirements for Aircraft with Live Ordnance. When carrying live or heavyweight inert free-fall ordnance, recover via the following “safe recovery” procedures:

8.1.6.8.1. **(Added-AVIANOAB)** Day VMC. Fly a visual straight-in avoiding over flight of towns.

8.1.6.8.2. **(Added-AVIANOAB)** Night or IFR. Fly the approved TACAN 05 procedure.

8.1.6.8.3. **(Added-AVIANOAB)** Pilots are responsible to ask ATC for a “safe recovery” if needed.

8.1.6.8.4. **(Added-AVIANOAB)** If aircraft must divert with live or heavyweight inert free-fall ordnance, pilots must fly a “safe procedure” to the divert location. Note: The only night/IMC divert safe recovery procedure is to Grosseto (see *31 FW Pilot Aid*). Grosseto is the primary divert for live/heavyweight inert.

8.1.6.8.5. **(Added-AVIANOAB)** Aircraft with forward firing ordnance only may proceed to initial via normal recovery procedures.

8.1.6.8.6. **(Added-AVIANOAB)** Practice approaches and patterns are prohibited for aircraft carrying any free-fall ordnance (exception: hot gun).

8.1.6.9. **(Added-AVIANOAB)** Hung Ordnance.

8.1.6.9.1. **(Added-AVIANOAB)** Hung Secure/Hung BDU-33. Recover via filed routing and fly the full penetration from Penny. Fly a straight-in with chase, avoiding populated areas. After landing, clear the runway to the south. Await EOD personnel to safe the aircraft. Aircraft with secure bombs that have been pinned may taxi back.

8.1.6.9.2. **(Added-AVIANOAB)** Hung Unsecure. If unsecure, jettison suspension equipment. Primary jettison for all ordnance is over the Adriatic. See para. 8.1.6.11. and reference the 31 FW Pilot Aid for specifics. If unable to jettison, fly a straight-in approach with chase, avoiding populated areas.

8.1.6.9.2.1. **(Added-AVIANOAB)** Aircraft with unsecure live and/or heavyweight inserts should land on RWY 23 if conditions permit to minimize over flight of populated areas. If cables need to be reconfigured, notify ATC ASAP.

8.1.6.9.2.2. **(Added-AVIANOAB)** Aircraft with unsecure bombs will stop on the runway, de-arm, then shut down.

8.1.6.9.3. **(Added-AVIANOAB)** Hung forward firing ordnance. After clearing the runway to the south, point the nose of the aircraft down the infield between the runway and the south parallel. After the aircraft and the weapons are safe, shut down in place. Aircraft with safe hung rockets may taxi back. See also LSA Exercise/Events, para. 8.1.2.16.

8.1.6.9.4. **(Added-AVIANOAB)** ALE-50 Fail to Sever.

8.1.6.9.4.1. **(Added-AVIANOAB)** All attempts to sever an ALE-50 will be conducted over water. Cease all attempts to sever when over Italian land mass or when airspeed/heading/altitude may cause impact on Italian land mass.

8.1.6.9.4.2. **(Added-AVIANOAB)** Inform SOF immediately. SOF will notify MADDOG and tower. MADDOG will notify BLACKJACK and SFS CP rep. Tower will activate stop lights with sufficient time to halt perimeter traffic and notify Airfield Ops for runway inspection.

8.1.6.9.4.3. **(Added-AVIANOAB)** If a confirmed or suspected separation occurs over land during recovery, notify SOF. SOF will record time, best known drop location, altitude, heading, airspeed, and wind at altitude. After landing, Top 3 will call MADDOG to pass words to initiate a dropped object OPREP through CP.

8.1.6.9.4.4. **(Added-AVIANOAB)** Avoid populated areas to the maximum extent possible. Land via a straight-in approach to RWY 05. Landing on RWY 23 presents significant hazards and should be considered as a last resort to safely recover the aircraft.

8.1.6.9.4.5. **(Added-AVIANOAB)** After landing, pilots will stop straight ahead on the runway to allow maintenance to visually inspect the aircraft. If required and able, sever LE-50 prior to taxiing clear of the runway. If mission requirements do not permit stopping on the runway, pilots will taxi clear at A4 to a distance allowing the ALE-50 and cable to be clear of the active runway. If ALE-50 does not sever during landing roll, the SOF, tower, and pilot will ensure further taxi does not present further hazards to the airfield environment. The SOF will inform the pilot if it is safe to taxi to de-arm or to de-arm/shutdown in place for a tow.

8.1.6.9.4.6. **(Added-AVIANOAB)** The SOF will coordinate a runway inspection once aircraft is clear of the runway.

8.1.6.10. **(Added-AVIANOAB)** Inadvertent/Unintentional Release. Mark the point if possible and notify the SOF. For inadvertent releases pilots will have the EOR ground crew hookup on the headset and explain the particulars of the occurrence. Pilots are reminded that once the aircraft is saved and is back in parking, it will be impounded IAW the *31 FW Pilot Aid*.

8.1.6.11. **(Added-AVIANOAB)** Jettison Areas/Procedures/Parameters

8.1.6.11.1. **(Added-AVIANOAB)** Adriatic Alternate Jettison Areas (Reference Attachment 19). Three jettison areas are available. Pilot safety is paramount, but if time, conditions, and fuel quantity permit, utilize one of these areas:

8.1.6.11.1.1. **(Added-AVIANOAB)** EJ 3: Radius 0.5nm from N4358.3 E1414.983. AVI 150°/140nm, SFC-8K'

8.1.6.11.1.2. **(Added-AVIANOAB)** EJ 6: Radius 0.4nm from N4203.967 E1722.033. AVI 136°/315nm, SFC-8K'

8.1.6.11.1.3. **(Added-AVIANOAB)** EJ 8: Radius 0.5nm from N4120.00

E1844.00. AVI 133°/388nm, SFC-FL150

- 8.1.6.11.2. **(Added-AVIANOAB)** Primary Jettison Area (Local Area). Jettison at least 12 nm from the coastline over the Adriatic clear of all sea vessels. The TACAN reference is AVI 160°/45. Do not jettison LIVE ordnance at this location.
- 8.1.6.11.3. **(Added-AVIANOAB)** Secondary Jettison Area (Local Area). The secondary jettison area is the 820' jettison circle south of the target on Maniago Range (N 4606 E 1243 Elev 750' or AVI 091/07 nm). Release will be VMC at 2800' MSL, heading 170°. Pilots will coordinate with Tower, if possible.
- 8.1.6.11.4. **(Added-AVIANOAB)** In the event jettison of fuel or stores is necessary, aircrew are requested to inform Italian BOC at DSN 632-4730/7108 upon landing with the following information: Date and time of jettison; mission number/callsign; number and type aircraft; number and type stores jettisoned; aircraft parameters to include, altitude, heading, and airspeed; and any other useful information.
- 8.1.6.12. **(Added-AVIANOAB)** Controlled Bailout Areas.
- 8.1.6.12.1. **(Added-AVIANOAB)** Primary Bailout Area. Position the aircraft outbound on the AVI 154° radial. Eject at 30 DME approaching feet wet with optimum airspeed and altitude.
- 8.1.6.12.2. **(Added-AVIANOAB)** Secondary Bailout Area. If the Primary Bailout Area is not feasible, position the aircraft outbound on the AVI 040° radial. Eject at optimum airspeed at 7,000' MSL at 8 DME on a heading of 040°.
- 8.1.6.13. **(Added-AVIANOAB)** Weather Watch. Standard operations may continue. All returning aircraft will remain at EOR until de-armed normally. All personnel should prepare to implement Weather Warning procedures without delay. Pilots will report any lightning or adverse weather observed in the local area to the SOF immediately.
- 8.1.6.14. **(Added-AVIANOAB)** Weather Warning. The SOF will declare WX hold. Pilots will not step to aircraft or start engines. Aircraft that have not taxied will shut down. Cease all outside activities and seek shelter. Close hangar doors. Contingency sorties may continue only with OG/CC and CAOC approval.
- 8.1.6.14.1. **(Added-AVIANOAB)** If the Weather Warning is due to lightning within 5 nm:
- 8.1.6.14.1.1. **(Added-AVIANOAB)** Aircraft taxiing for launch will remain at EOR until warning is terminated. Pilots contact SOF for guidance.
- 8.1.6.14.1.2. **(Added-AVIANOAB)** Aircraft landing with forward firing munitions (such as rockets, but not including a hot gun) and/or live munitions will contact the SOF and remain at EOR until properly de-armed. Taxi back only with OG/CC approval and MX coordination. Words will be passed through the SOF. Aircraft landing with chaff/flare, training munitions, and/or a hot gun will contact the SOF and proceed directly to PAS/parking spot.
- 8.1.6.14.1.3. **(Added-AVIANOAB)** Aircraft arriving at the PAS/parking spot will be chocked, pinned, saved, and shutdown expeditiously. Pilots and MX crews will then seek shelter.

8.1.6.15. **(Added-AVIANOAB)** Digital Flight Control System (DFLCS) Anomalies. Pilots experiencing any DFLCS malfunctions (including Cautions and Warnings) during maneuvering flight will initiate a KIO to assess the situation and take the appropriate action. "Maneuvering flight" includes, but is not limited to, BFM, ACM, air-to-air threat reactions, surface-to-air threat reactions, etc.

8.1.6.16. **(Added-AVIANOAB)** Divert Instructions. In the event of divert, execute local climbout or as directed and expect coordination with departure for further instruction. Reference *31 FW Pilot Aid*.

8.1.6.17. **(Added-AVIANOAB)** Search and Rescue Procedures. Search and Rescue Procedures will be in accordance with the *31 FW Pilot Aid*.

8.1.6.18. **(Added-AVIANOAB)** Ground-to-Air Lasing Incidents.

8.1.6.18.1. **(Added-AVIANOAB)** Lased Pilot Actions:

8.1.6.18.1.1. **(Added-AVIANOAB)** Look away from laser source and transition to instruments.

8.1.6.18.1.2. **(Added-AVIANOAB)** Assess visual function. If visual disturbance persists for more than 60 seconds, declare IFE and RTB as soon as practical.

8.1.6.18.1.3. **(Added-AVIANOAB)** Avoid rubbing eyes.

8.1.6.18.1.4. **(Added-AVIANOAB)** Transmit the source of the laser on the current operating frequency. Pass information to the ATC controller to warn other aircraft and/or divert flight paths away from the laser

8.1.6.18.1.5. **(Added-AVIANOAB)** Be prepared to provide the following info to SOF, when able: Laser color, Pulsed/Non-pulsed, Duration of exposure, Axis/Off-Axis exposure, Distance/Slant range from threat, Coordinates / Time / Altitude, Visual disturbance symptoms, Optical devices / Laser Eye Protection worn, Environmental factors.

8.1.6.18.1.6. **(Added-AVIANOAB)** See Flight Surgeon after landing.

8.1.6.18.1.7. **(Added-AVIANOAB)** Fill out 31 FW Aircraft Incident Worksheet for 31 FW Flight Safety

8.1.6.18.2. **(Added-AVIANOAB)** SOF:

8.1.6.18.2.1. **(Added-AVIANOAB)** Record all information received from the pilot concerning lasing incident (see SOF QRC)

8.1.6.18.2.2. **(Added-AVIANOAB)** Contact the following agencies and pass pertinent information:

8.1.6.18.2.2.1. **(Added-AVIANOAB)** LE interpreter: 632-2000 (desk), 335-569-7345 (cell)

8.1.6.18.2.2.2. **(Added-AVIANOAB)** Command Post: 632-3100

8.1.6.18.2.2.3. **(Added-AVIANOAB)** LE Desk: 632-7200

8.1.6.18.2.2.4. **(Added-AVIANOAB)** OG/CC ("OG Stick")

8.1.6.18.2.2.5. **(Added-AVIANOAB)** Both FS Top 3s

8.1.6.18.2.2.6. **(Added-AVIANOAB)** OSI agents per Duty Roster in SOF Book 1.

8.1.6.18.3. **(Added-AVIANOAB)** Top 3 will contact the on-call Flight Surgeon and 31 FW Flight Safety.

8.1.7. Attachments (Illustrations).

8.1.7. **(AVIANOAB)** (31 FW) Attachments (Illustrations). See Attachments 5 through 19 for Glossary of References along with supporting material, airfield, traffic pattern, and airspace information.

8.2. If applicable, include procedures for the following in the appropriate : (T-1).

8.2.1. Command and Control.

8.2.2. Fuel Requirements and Bingo Fuels.

8.2.3. Diversion Instructions.

8.2.4. Jettison Areas, Procedures and Parameters (IFR/VFR).

8.2.5. Controlled Bailout Areas.

8.2.6. Local Weather Procedures.

8.2.7. Unit Standards.

8.2.8. Approved Alternate Missions.

8.2.9. Cross-Country Procedures.

8.2.10. Search and Rescue and On-Scene Commander Procedures.

8.2.11. Bird/Wildlife Aircraft Strike Hazard (BASH) program guidance IAW AFI 91-202, *The US Air Force Mishap Prevention Program* and AFPAM 91-212, *Bird Aircraft Strike Hazard (BASH) Management Techniques*.

8.2.12. Environmental Restrictions to Flight Operations (winds, sea state, temperature, etc.) applicable to unit operating locations.

8.3. Instructions. Prior to publishing, units will forward copies of the local supplement of this document to MAJCOM and appropriate subordinate agencies, which will review and return comments back to the unit(s). **(T-1).**

BURTON M. FIELD, Lt Gen, USAF
DCS, Operations, Plans and Requirements

(AVIANOAB)

JON A. NORMAN, Brigadier General, USAF
Commander

Attachment 1**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

AFI 11-202, Volume 3 ,*General Flight Rules*, 22Oct 2010

AFI 11-205, *Aircraft Cockpit and Formation Flight Signals*, 19 May 1994

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AFI 11-218, *Aircraft Operations and Movement on the Ground*, 28 Oct 2011

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AFI 11-404, *Centrifuge Training for High-G Aircrew*, 28 Oct 2005

AFI 90-201, *The Air Force Inspection System*, 2 Aug 2013

AFI 33-360 *Publications and Forms Management*, 7 Feb 2013

AFMAN 11-217 Volume 1, *Instrument Flight Procedures*, 22 Oct 2010

AFMAN 11-217 Volume 3, *Supplemental Flight Information*, 23 Feb 2009

AFMAN 33-363, *Management of Records*, 1 March 2008

AFPAM 11-216, *Air Navigation*, 1 Mar 2001

AFPAM 11-419. *G-Awareness for Aircrew*, 1 Dec 1999

AFPD 11-2, *Aircraft Rules and Procedures*, 19 Jan 2012

AFPD 11-4, *Aviation Service*, 1 Sep 2004

AFTTP 3-1 Volume 1, *General Planning and Employment Considerations*, 15 Sep 2008

AFI 11-2F-16V1, *F-16--Aircrew Training*, 19 Jan 2007

AFTTP 3-1.F-16, *Tactical Employment--F-16*, 29 Jun 2012

AFTTP 3-3.F-16, *Combat Aircraft Fundamentals--F-16*, 29 Jun 2012

AFI 91-202, *The US Air Force Mishap Prevention Program*, 5 Aug 2011

AFPAM 91-212, *Bird Aircraft Strike Hazard (BASH) Management Techniques*, 1 Feb 2004

Adopted Forms

AF Form 847, *Recommendation for Change of Publication*

AFTO Form 781, *ARMS Aircrew/Mission Flight Data Document*

AFTO FORM 781A, *Maintenance Discrepancy and Work Document*.

Abbreviations and Acronyms

ACBT—Air Combat Training

ACM—Air Combat Maneuver

ACMI—Air Combat Maneuvering Instrumentation

AFTTP—Air Force Tactics, Techniques, and Procedures

AGCAS—Automatic Ground Collision Avoidance System

AGL—Above Ground Level

AGSM—Anti-G Straining Maneuver

ALOW—Automatic Low Altitude Warning

AMD—Acceleration Monitoring Device

AOA—Angle of Attack

ARTS—Automated Recovery Training Series

ASR—Airport Surveillance Radar

ATC—Air Traffic Control

AWACS—Airborne Warning and Control System

BFM—Basic Fighter Maneuver

BMC—Basic Mission Capable

CAP—Critical Action Procedure

CARA—Combined Altitude Radar Altimeter

CG—Center of Gravity

CMR—Combat Mission Ready

CE—Combat Edge

ECM—Electronic Counter Measure

EMCON—Emission Control

EMR—Emergency Release

EMS—Engine Monitoring System

EOR—End of Runway

EP—Emergency Procedure

FAC—Forward Air Controller

FAF—Final Approach Fix

FCIF—Flight Crew Information File

FE—Flight Examiner
FLCS—Flight Control System
FLIP—Flight Information Publications
FOD—Foreign Object Damage
GCAS—Ground Collision Avoidance System
GCI—Ground Control Intercept
GLOC—G—induced Loss of Consciousness
HARTS—Horn Awareness and Recovery Training Series
HUD—Heads-Up Display
IFF—Identification, Friend or Foe
IFR—Instrument Flight Rules
ILS—Instrument Landing System
IMC—Instrument Meteorological Conditions
INS—Inertial Navigation System
IP—Instructor Pilot or Initial Point
IQT—Initial Qualification Training
IR—Instrument Route
JOAP—Joint Oil Analysis Program
LANTIRN—Low Altitude Navigation and Targeting Infrared for Night
LEP—Laser Eye Protection
LIS—Line in the Sky
MOA—Military Operating Area
MPO—Manual Pitch Override
MQT—Mission Qualification Training
MSA—Minimum Safe Altitude
MSL—Mean Sea Level
NVG—Night Vision Goggles
OAP—Offset Aim Point
OFP—Operational Flight Program
PAR—Precision Approach Radar
PARS—Pilot Activated Recovery System
PDM—Programmed Depot Maintenance

RAA—Route Abort Altitude
RBS—Radar Bomb Scoring
RCO—Range Control Officer
RCR—Runway Conditions Reading
RMSA—Recovery Minimum Safe Altitude
RNAV—Area Navigation
ROE—Rules of Engagement
ROM—Runway Operations Monitor
SAR—Search and Rescue
SCP—Set Clearance Plane
SD—Spatial Disorientation
SFO—Simulated Flame Out
SOF—Supervisor of Flying
TDA—Tactical Decision Aid
TOLD—Takeoff and Landing Data
VFR—Visual Flight Rules
VMC—Visual Meteorological Conditions
VR—Visual Route
VRD—Vision Restriction Device
VTR—Video Tape Recorder
WSEP—Weapon System Evaluation Program

Terms

Air Combat Training (ACBT)—A general term which includes (D)BFM, (D)ACM, and (D)ACT (AFI 11-214).

Air Combat Tactics (ACT)—Training in the application of BFM, ACM, and tactical intercept skills to achieve a tactical air-to-air objective.

Basic Mission Capable (BMC)—See AFI 11-2F-16V1.

Combat Edge (CE)—A positive-pressure breathing-for-G (PPG) system which provides pilots additional protection against high positive G accelerations experienced during flight. The system consists of aircrew equipment (high-pressure mask, counter-pressure suit, G-suit), and aircraft equipment (oxygen regulator, G-valve, and interfacing sense line). At 4-G and above, regulated air and oxygen are supplied to provide automatic mask tensioning, vest inflation, and positive pressure breathing to the mask.

Combat Mission Ready (CMR)—See AFI 11-2F-16V1.

Continuation Training (CT)—See AFI 11-2F-16V1.

Flight Lead (FL)—As designated on flight orders, the individual responsible for overall conduct of mission from preflight preparation/briefing to postflight debriefing, regardless of actual position within the formation. A certified 4-ship FL may lead formations and missions in excess of four aircraft, unless restricted by the unit CC. A 2-ship FL is authorized to lead an element in a larger formation.

Initial Qualification Training (IQT)—See AFI 11-2F-16V1.

Low Altitude Navigation and Targeting Infrared for Night (LANTIRN)—A navigation and targeting system that provides tactical aircraft with a low-altitude, under-the-weather, day and night operational capability.

Low Altitude Training (LOWAT)—See AFI 11-2F-16V1.

Mission Qualification Training (MQT)—See AFI 11-2F-16V1

Target MSA—An altitude that provides at least 1,000 feet of clearance above all obstacles within 5 nautical miles of the target.

Squadron Supervisor—Squadron Commander, Asst/Operations Officers, and Flight CCs. ANG and AFRC only: as designated by the OG/CC.

Attachment 1 (AVIANOAB)**GLOSSARY OF REFERENCES AND SUPPORTING INFORMATION*****References***

31 FW Pilot Aid

31 FW SOF Quick Reaction Checklist

S.O.P. ADD - 01, Centro Operativo Alternato/Mobile

SMA 73, Regolamentazione Attività Di volo a Bassissima Quota

Manuale BOAT Vol 2, Low Flying Manual

SMA 7, Procedure Per La Programmazione Ed Esecuzione Delle Missioni Del Traffico Aereo Operativo

AFI 11-2F-16V1, F-16 Pilot Training, 11 August 2011

AFI 11-2F-16V3, F-16 Operations Procedures, 18 February 2010

AFI 11-202V3, USAFE Supplement 1, General Flight Rules, 19 March 2012

AFI 11-214, Air Operations Rules and Procedures, 14 August 2012

AFI 11-218, Aircraft Operations and Movement on the Ground, 28 October 2011

AFI 11-301V1, USAFE Supplement 1, Aircrew Life Support Program, 28 January 2004

AFTTP 3-3.5, Combat Aircraft Fundamentals, F-16C/D

Abbreviations, Acronyms and Terms

AAR—Air to Air Refueling

AB—Air Base

ACC—Air Control Center

AE—Armed Forces Europe

AF—Air Force

AFI—Air Force Instruction

AFMAN—Air Force Manual

AFTO—Air Force Technical Order

AHC—Advanced Handling Characteristics

AMIS—Advanced Meteorological Information System

AMOPS—Airfield Management Operations

AP—Area Planning

APO—Army Post Office

ASAP—As Soon As Possible

ASRR—Airfield Suitability and Restrictions Report
ATIS—Automated Terminal Information System
AUTMIX—Assigned Mission
BBQ—Italian low-level maps and NOTAMs
BIRDTAMS—Bird Notices to Airman
BOAT—Italian Low-level Operational Air Traffic Flight Manual
BOC—Italian Base Operations Center
CAOC5—Combined Air Operations Center Five
CH—Channel
CL—Checklist
CSAR—Combat Search and Rescue
DCDRUSEUCOM—Deputy Commander US European Command
DD—Department of Defense form
DER—Departure End of Runway
DLA—Defense Logistics Agency
DMA—D. Marchiori Aprilia
DME—Distance Measuring Equipment
DOD—Department of Defense
DSN—Defense System Network
DTC—Data Transfer Cartridge
DV—Distinguished Visitor
ECHUM—Electronic Chart Update Manual
ECM—Electronic Counter-Measures
EOD—Explosive Ordnance Disposal
EPU—Emergency Power Unit
FCP—Front Cockpit
FCF—Functional Check Flight
FIR—Flight Information Region
FMI—Frequency Modulation Immunity
FS—Fighter Squadron
FV—Falcon View
DO—Director of Operations

ENAC—Italian Civil Aviation Authority

FTIT—Fan Turbine Inlet Temperature

GCA—Ground Controlled Approach

GP—General Planning

GP—Glide Path

HARTS—Horn Awareness and Recovery Training Series

HI—High Illumination

HQAFMC/SES—Headquarters Air Force Materiel Command Directorate of Safety

IAF—Initial Approach Fix

IAW—In Accordance With

ICAO—International Civil Aviation Organization

IFE—Inflight Emergency

IFF—Identification, Friend or Foe

ITAF—Italian Air Force

KIAS—Knots Indicated Airspeed

LANTIRN—Low Altitude Navigation and Terrain Infra-Red at Night

LOC—Localizer

LOWAT—Low Altitude

LSA—Logistics Support Aircraft

MARSA—Military Assumes Responsibility for Separation of Aircraft

MFD—Multi Function Display

MH—Magnetic Heading

MILAIP—Military Aeronautical Information Publication

MX—Maintenance

MXG—Maintenance Group

NAF—Numbered Air Force

NARF—Navigation Auto Realignment Feature

NATO—North Atlantic Treaty Organization

NM—Nautical Mile

NORDO—No Radio

NLT—Not Later Than

OCF—Operational Check Flight

OGRF—Operations Group Read File
OGV—Operations Group Stan/Eval
OI—Operating Instruction
ORM—Operational Risk Management
OSOS—Operations Support Operations Scheduling
OSS—Operations Support Squadron
PAS—Protected Aircraft Shelter
PENNY—IAF for approach to RWY 05 at Aviano
PEX—Patriot Excalibur
PFPS—Portable Flight Planning Software
PIC—Pilot in Command
PVG—Programma Voli Giornalieri (Daily Flying Schedule)
RAPCON—Radar Approach Control
RCP—Rear Cockpit
RF—Radio Frequency
RMC—Removable Memory Cartridge
RTB—Return to Base
SA—Situational Awareness
SACEUR—Supreme Allied Commander, Europe
SARMS—Squadron Aviation Resource Managers
SCC—Sector Coordination Center
SEC—Secondary Mode
SFA—Single Frequency Approach
SFC—Surface
SID—Standard Instrument Departure
SILVA—IAF for approach to RWY 05 at Aviano
SMS—Stores Management System
SPINS—Special Instructions; refers to AOR in this context
STIF—Supplemental Theater Information File
TCAS—Traffic Alert and Collision Avoidance System
TCN—Terminal Change Notice
TERP—Terminal En-Route Procedure

TGP—Targeting Pod

TO—Technical Order

UHF—Ultra-High Frequency

URITS—USAFE Rangeless Instrumentation Training System

USAF—United States Air Force

USAFE—US Air Forces Europe

VHF—Very High Frequency

WX—Weather

Attachment 2

CHEMICAL, BIOLOGICAL, RADIOLOGICAL, NUCLEAR, AND HIGH YIELD EXPLOSIVE (CBRNE) OPERATIONS (T-1)

A2.1. General Information. Potential adversary use of CBRNE weapons against a friendly airfield presents a serious threat to flying operations. Although the most effective way for aircrews to avoid this threat is to be airborne before those weapons are detonated/dispersed and then land at a field that has not been contaminated, all personnel must be prepared to operate from a field that has come under CBRNE attack.

A2.2. Mission Preparation. Be aware of the status of the CBRNE environment at the planned launch and recovery airfields, potential divert bases, and throughout the area in which the sortie may fly. Know the current and forecast surface wind direction and the MOPP level in effect for relevant sectors of the airfield. Don appropriate aircrew chemical defense equipment (ACDE) or Ground Crew Ensemble (GCE) to match the appropriate MOPP level (reference AFMAN 10-100) and carry individual protective equipment (IPE) as required.

A2.3. Stepping to Fly and Aircraft Preflight. This may entail donning ACDE or transitioning from GCE to ACDE. Take precautions to protect aircrew from injury and or contamination while in transit from the squadron facility to the aircraft. If possible, transport aircrew in a vehicle that provides overhead cover (enclosed vehicle). If aircrew travel on foot is unavoidable, choose a route that takes maximum advantage of available overhead cover (sun shades, buildings, etc.) to avoid agents that may be settling from the air. If extra aircrew members are available for preflight duties, consider assigning them to do so wearing GCE. This will allow the aircrew actually flying to minimize exposure.

A2.3.1. Alarm Red (or Theater Equivalent) Prior to Engine Start. If Alarm Red occurs during the step or preflight process, take cover and don appropriate MOPP. This may require use of the ground crew mask. A hardened aircraft shelter (HAS) provides optimum protection, if available. Use caution if entering a HAS that contains aircraft and/or equipment. Close doors after entry. If a HAS or other overhead cover is not immediately available, accept the best rapidly reachable cover.

A2.4. Engine Start to Takeoff. If a HAS is available, use it to minimize exposure time by accomplishing aircraft arming and End of Runway (EOR) procedures inside it (if local procedures permit) and by delaying taxi time as long as possible prior to takeoff.

A2.4.1. Aircraft Launch to Survive (LTS). Units will develop local procedures to provide this option to the commander. In general, aircraft may LTS any time after engine start if they have sufficient fuel and safe, expeditious access to a runway. This option may only be practical for aircraft that are near EOR prior to takeoff or that have just landed.

A2.4.2. Alarm Red Prior to Taxi. If in a HAS, the normal procedure is to shut down. Engine noise may preclude effectiveness of normal alert notification procedures, so ensure ground personnel are aware of the alarm warning, assume proper MOPP, and close HAS doors. Use hand signals if necessary.

A2.4.3. Alarm Red (or Theater Equivalent) After Taxi. Units typically establish procedures for this contingency depending on whether additional protection is available along the taxi route (empty HAS, for instance). Ideally, ground crew sheltering in such a HAS would be

available to assist in normal engine shutdown procedures and to close HAS doors. If protection is not available, the best option may be LTS. Maintain contact with Command and Control (C2) entities (Wing Operations Center, Maintenance Operations Center, Supervisor of Flying, etc.) to ensure unity of effort in the overall plan.

A2.5. Takeoff to Landing.

A2.5.1. Contamination. If Chemical Warfare (CW) agent contamination occurred prior to takeoff, flying the aircraft will dissipate the agent to some degree. The total amount of dissipation will be greater with lower flight altitudes and longer flight times. Because the agent may have entered wheel wells, flaps, etc., consider flying in landing configuration to increase airflow to these areas. In any circumstances, merely flying the aircraft is unlikely to achieve complete decontamination.

A2.5.2. Preparing to Land. Aircrew should remain aware of the status of primary and alternate landing locations. Do not attempt to land during Alarm Red situations unless there is no other option. Follow C2 directions and either hold or divert. If mission needs preclude divert, hold until the Alarm Red (or theater equivalent) has cleared or become an Alarm Black. Prior to landing, gain awareness of contaminated sectors of the airfield and of current/forecast surface winds. Use this information in conjunction with C2 direction to plan a route from landing to engine shutdown. The liquid deposition phase following a CW airburst attack can extend up to 1 hour. If landing during Alarm Black, expect a contaminated environment and MOPP 4.

A2.6. Landing to Engine Shutdown. Take advantage of any protection available, minimizing taxi time and distance. Maintain contact with C2 in order to remain aware of unexploded ordnance and/or damage to airfield movement surfaces. If a HAS is available and local procedures permit, accomplish aircraft de-arm and EOR procedures there. If Alarm Red (or Theater Equivalent) occurs between landing and engine shutdown, considerations are similar to those discussed in the engine-start-to-takeoff section.

A2.7. After Engine Shutdown. Don appropriate MOPP if not already worn. If circumstances permit, accomplish normal post-flight inspection procedures. If the aircraft is not contaminated, close the canopy. If there is any suspicion of personnel contamination, aircrew will process through an aircrew contamination control area (ACCA). Accomplish maintenance debriefings under cover to the maximum extent possible.

Attachment 3

FLIGHT BRIEFING GUIDES

Table A3.1. General Briefing Guide.

<p>Mission Data.</p> <ul style="list-style-type: none"> Time Hack EP / Threat of the Day Mission Objective(s) Mission Overview Mission Data Card <ul style="list-style-type: none"> Mission Commander / Deputy Lead Joker / Bingo Fuel Takeoff and Landing Data Weather / Sunrise / Sunset / Moon Illumination Tactical Decision Aid / Transmissivity / Absolute Humidity NOTAMs / Bird Strike Potential Personal Equipment FCIF / Pubs / Maps <p>Ground Procedures.</p> <ul style="list-style-type: none"> Step Pre-Flight <ul style="list-style-type: none"> Aircraft Armament Boresight Check-In Taxi / Marshalling / Arming Spare Procedures <p>Takeoff.</p> <ul style="list-style-type: none"> Runway Lineup Formation Takeoff Takeoff Interval Abort Jettison Procedures Low Altitude Ejection Landing Immediately After Takeoff <p>Departure/En Route.</p> <ul style="list-style-type: none"> Routing Trail Departure Join-Up / Formation Systems / Ops Checks <p>Airspace.</p> <ul style="list-style-type: none"> Area Times Restrictions (Chaff/Flare/Supersonic) Bailout (Controlled/Uncontrolled) 	<p>Recovery.</p> <ul style="list-style-type: none"> Rejoin Battle Damage / Bomb Check Type Recovery Flight Break-Up Pattern and Landing After Landing / De-Arm Emergency / Alternate Airfields <p>Special Subjects (As Applicable).</p> <ul style="list-style-type: none"> General Roles and Responsibilities (IP, Flight Lead, Wingman) Formation Specific Responsibilities and Priorities Flight Member Mission Priorities Task / Sensor Prioritization Deconfliction Contracts Chase Procedures IFF Procedures Collision Avoidance <ul style="list-style-type: none"> Radar / Visual Search Responsibilities Departure/Enroute/Recovery High Density Traffic Areas Mid-Air Collision Avoidance <ul style="list-style-type: none"> From Other Military Aircraft From Civilian Aircraft Dissimilar Formations Terrain Avoidance <ul style="list-style-type: none"> Departure / En Route / Recovery Use of Controlled Flight Into Terrain Prevention Systems CARA ALLOW MSL Line-In-The-Sky Ground Collision Avoidance System <ul style="list-style-type: none"> (GCAS)/Minimum Terrain Clearance (MTC) (AGCAS)/MODE/Chevrons Targeting Pod Attitude Advisory Function Bird Strike Procedures / Use of Visor(s) Human Factors Considerations (i.e., Channelized Attention, Task Saturation / Prioritization and Complacency) G-AwarenessTurn / G-Suit connection / G-tolerance <ul style="list-style-type: none"> Use of L-1 Anti-G Straining Maneuver Visual Illusions / Perceptions Spatial Disorientation / Unusual Attitudes / G-excess illusion PARS Considerations
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MSA	Lost Wingman Radio Inoperative SAR / CSAR Recall Procedures SIIs Pilot currencies for events to be flown Training Rules / Special Operating Instructions / Rules of Engagement Tactical Portion of Mission
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Table A3.2. Additional Briefing Items, NVG.

Weather / Illumination: Civil / Nautical Twilight Moon Rise/Set Times / Phase / Elevation / Azimuth Ceiling / Visibility LUX / EO TDA Obscurants to Visibility NVG Preflight: Check Adjustments / Helmet Fit and Security Batteries Resolution / Focus (Hoffman ANV-20/20 Tester, Eye Lane) NVG Compatible Flashlight Cockpit Preflight: Cockpit Setup Cockpit Lighting (Leaks) Cockpit FAM Check Focus and Stow for Taxi Before Takeoff: Don NVGs / Check and Adjust Stow for Takeoff Airborne: Exterior Lights NVG Donning Scan Pattern Forward Scan Narrow Field of View vs. Field of Regard Peripheral Vision Scan Techniques Join-up and Enroute Considerations Rejoin / Closure Air-to-Air TACAN G-Awareness Considerations Lighting Visible Horizon/30 Up & Down Maneuver	F-16D NVG Procedures / Crew Coordination NVG Abnormal Situations / Emergencies Lost Sight-NVGs Lost Wingman-NVGs Transition to Instruments Visual Illusions / Depth Perception Disorientation / Misorientation / Vertigo / PARS Fatigue NVG Failure Battery Failure / Swap Out Overconfidence in NVG Capabilities Correct Lighting of Primary / Secondary Flight Instruments Lost Comm (with Wingman / Target) Aircraft Emergency Ejection-Goggles-OFF Target Fixation Lack of Dive Information Target / Fighter Enters IMC No Tally by 1,500' Slant Range 700 feet in VID mode [except tanker rejoins] Radar Break Lock Inside 1,500' Excessive Overtake / Target Maneuvers Laser Eye Protection (LEP) Use Laser / IR Pointer Safety NVG FOD Considerations (Batteries, Equipment, etc) NVG ROE/Training Rules
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Deconfliction / Separation Route Study / Scene Interpretation NVG Predictions Terrain/Shadowing/Visual Illusions/Visible Horizon Terrain Avoidance Radar Altimeter City / Cultural Lighting Direction / Orientation of Lighting Formation Maneuvering Map Reading	
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Table A3.3. Additional Briefing Items, Air Refueling.

General Tanker Call Sign(s) / Receiver Assignments Refueling Track(s) Altitude Airspeed Airspace Restrictions ARIPs, ARCPs, ARCTs Radio Frequencies Buddy Procedures: Departure Join-Up En Route: Route of Flight Formation Ops Checks Rendezvous: Type Rendezvous Holding Procedures / Formation Ground Radar Assistance Tanker Identification - TACAN / Radar / Visual Radar Procedures / Techniques Wingman / Deputy Lead Responsibilities Receiver Formation / Join-Up Procedures Rendezvous Overrun	Refueling: Checklist Procedures Radio Calls Refueling Order Techniques EMCON Level Visual Signals Fuel Off-Load Bingo Fuel (Abort Points / Abort Bases) Drop-Off Procedures Wake Turbulence Reform and Exit: Formation Clearance Emergency Procedures: Breakaway Procedures Systems Malfunctions Damaged Receptacle IMC/Night Considerations: Loss of Visual Contact Aircraft Lighting Special Subjects: Fuel Awareness / AB Use / Consumption Rates Flight Path Deconfliction / Other Receiver Considerations Human Factors Considerations (i.e., Channelized Attention, Task Saturation / Prioritization and Complacency)
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Table A3.4. Additional Briefing Items, Low-Level Navigation.

General Route / Clearance / Restrictions Flight Responsibilities Navigation Radar / Visual Search Entry / Spacing / Holding / Initial Altitude / MSA Route Procedures: Fence Checks Tactical Formation / Turns Low-Level Navigation Dead Reckoning/Use of Nav Aids/Equipment (EGI) Radar Procedures / Techniques / Predictions Visual Procedures / Techniques / IR Predictions Updates / Calibrations Time / Fuel Control Terrain Following / Wingman Considerations / Pilot Comfort Level Leg Altitudes/Set Clearance Plane/Obstacles (MSL/AGL) Turnpoint Acquisition Obstacle / Ground Avoidance Use of Altitude Warning Features (GCAS, ALOW and Line-In-The-Sky MSL Floor Settings, AGCAS MODE/Chevrons Enabled/Disabled) Threat Reactions RWR / ECM / Chaff / Flares Engagement Criteria Flight Path Deconfliction Termination	Contingencies Aircraft Fallout Plan Rejoin After Late Takeoff Emergencies: Aircraft Malfunctions Route Abort Procedures (RAA / MSA) / ATC Frequencies Alternate Mission Type Mission (refer to appropriate mission briefing guide) Mission Objectives Special Subjects Airspace Restrictions G-Awareness / Ops Checks Fuel Awareness / AB Use / Consumption Rates Flight Path Deconfliction Maneuvering Limitations Airspeed and G Recognition/Prevention/Recovery from Out of Control Time to Ground Impact Wings Level Overbank / Under G Night Considerations Human Factors Considerations (i.e., Channelized Attention, Task Saturation / Prioritization and Complacency)
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Table A3.5. Additional Briefing Items, Air-to-Surface Range Operations.

Range Information Target / Range Description Restrictions Range Entry / Holding Radio Procedures Formation Sequence of Events Pattern Procedures Aircraft Fallout Plan Rejoin on Range for Late Takeoffs Employment Procedures/Techniques:	Night Procedures: Aircraft Lighting Radio Calls Target ID / Range Lighting Night Spacing Techniques Instrument Cross-check / Disorientation Flare Pattern Flare Release Points and Interval Wind Effect / Offset Dud Flare Procedures Switching Aircraft Patterns
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<p>Avionics / Switch Positions</p> <ul style="list-style-type: none"> Weapons Switchology / Delivery Mode Radar Switchology Special Weapons Switchology <p>Laydown / Loft Events</p> <ul style="list-style-type: none"> Ground track / Altitude / Airspeed Radar / Optical Depiction (OAP / TGT) Radar / Optical Tuning / Techniques Pickle / Release Point Breakaway / Recovery Technique Backup Deliveries / EMR Delivery Spacing <p>Pop-Up Delivery</p> <ul style="list-style-type: none"> Entry Airspeed / Altitude Pop Point / Pull-Up Angle / Power Setting Target Acquisition Pull Down / Apex Altitudes Pattern Corrections <p>Roll-In</p> <ul style="list-style-type: none"> Position Techniques (Pitch / Bank / Power) Roll-Out / Wind Effect <p>Final</p> <ul style="list-style-type: none"> Aim-Off Distance Dive Angle Airspeed HUD Depiction Sight Picture / Corrections / Aim-Point Release Parameters Release Indications Recovery Procedures <p>Special Procedures:</p> <ul style="list-style-type: none"> Live Ordnance Considerations <ul style="list-style-type: none"> Safe Escape / Safe Separation Fuse Arming / Frag Avoidance RBS Operations Laser Operations 	<p>Over Water Range Operations:</p> <ul style="list-style-type: none"> Employment Techniques <ul style="list-style-type: none"> Depth Perception / Reduced Visual Cues Distance / Altitude Estimation Pop-Up Positioning <ul style="list-style-type: none"> Timing Visual/Aircraft References to Establish Pull-Up Pt Special Considerations <ul style="list-style-type: none"> Adjusted Minimum Altitudes <p>Range Departure Procedures:</p> <ul style="list-style-type: none"> Armament Safety Checks Rejoin Battle Damage / Bomb Check Jettison Procedures / Parameters Hung / Unexpended Ordnance Inadvertent Release Gun Unsafe / Jam <p>Alternate Mission</p> <ul style="list-style-type: none"> Type Mission (refer to appropriate mission briefing guide) Mission Objectives <p>Special Subjects</p> <ul style="list-style-type: none"> Error Analysis Fouls Minimum Altitudes Target Fixation G-Awareness Fuel Awareness / Ops Checks / AB Use / Consumption Rates Maneuvering Limitations <ul style="list-style-type: none"> Airspeed / G / Stress (Carriage / Release) Recognition/Prevention/Recovery from Out of Control Time to Ground Impact <ul style="list-style-type: none"> Wings Level Overbank / Under G Chevron Cues Enabled/Disabled Human Factors Considerations (i.e., Channelized Attention, <ul style="list-style-type: none"> Task Saturation / Prioritization, and Complacency)
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Table A3.6. Crew Coordination / Passenger / Ground Crew Briefing Guide.

Crew Coordination / Passengers: Pre-Flight Prohibited Items Cockpit Layout Flight Maneuvering Parameters Change of Aircraft Control Rear Seat Landing Procedures Emergencies Runway Departure Canopy Loss Ejection / Egress (With and Without Intercom) / Ejection Mode Selector Handle Position Loss of Intercom Bird Strike Procedures / Use of Visor(s) Flight Control Interference Rudder Interference - Rudder Pedal Adjustment Stick Interference - Lapbelt, Utility Light, Personal Equipment, Leg Position, Paddle Switch Override	Ground Crew: Act Only On Pilot's Instructions Ground Emergency Procedures Hand Signals Aircraft Danger Areas
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Table A3.7. Mission Debriefing Guide.

Ground Procedures Takeoff/Join-Up/Departure En Route Procedures Recovery/Landing/After Landing General: SIIs Radio Procedures Flight Member Responsibilities Formation and Deconfliction Contracts Sensor Management/Prioritization Training Rules/Special Operating Instructions	Mission Accomplishment/Analysis: Mission Reconstruction Mission Support VTR / Film Assessment Anti-G Straining Maneuver Effectiveness Tactical Employment Priorities Learning Objectives Achieved Lessons Learned Recommendations for Improvement Comments/Questions
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Attachment 4

CRITICAL ACTION PROCEDURES (CAPS)

A4.1. General. The following procedures will be evaluated IAW MAJCOM guidelines. Pilots shall be able to immediately accomplish these procedures in the published sequence without reference to the checklist. Certain steps (e.g., Stores - Jettison) may be performed out of sequence, if conditions warrant. CAPs may be abbreviated when written, but procedural intent must be clear. **(T-1).**

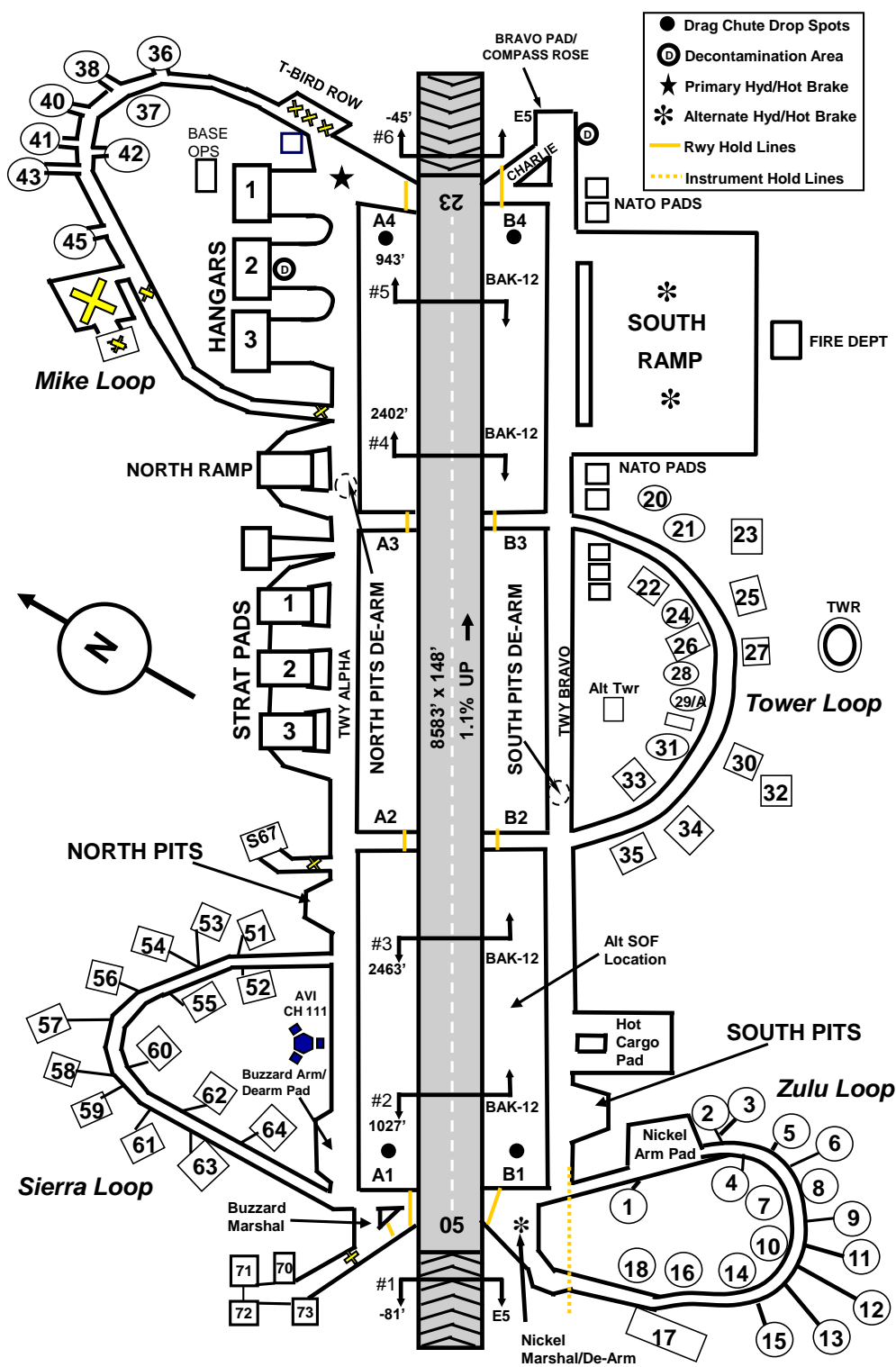
Table A4.1. Critical Action Procedures (CAPs).

<p>FIRE/OVERHEAT/FUEL LEAK (GROUND)</p> <ol style="list-style-type: none"> 1. Throttle - Off 2. JFS - Off 3. Fuel Master Switch - Off <p>GROUND EGRESS</p> <ol style="list-style-type: none"> 1. Throttle - Off 2. Seat - Safe 3. Belt / Kit / Harness / G-Suit - Release <p>ABORT</p> <ol style="list-style-type: none"> 1. Throttle - Idle 2. Hook - Down (Above 100 Knots or If Required) <p>AB MALFUNCTION ON TAKEOFF (TAKEOFF CONTINUED)</p> <ol style="list-style-type: none"> 1. Throttle - MIL 2. Stores - Jettison (If Required) <p>ENGINE FAILURE ON TAKEOFF (TAKEOFF CONTINUED)</p> <ol style="list-style-type: none"> 1. Zoom 2. Stores-Jettison (If Possible) 3. Eject <p>ENGINE FIRE ON TAKEOFF (TAKEOFF CONTINUED)</p> <ol style="list-style-type: none"> 1. Climb 2. Stores - Jettison (If Required) 	<p>[PW 220/229] LOW THRUST ON TAKEOFF/AT LOW ALTITUDE (NON-AB)</p> <ol style="list-style-type: none"> 1. Throttle - AB 2. Stores - Jettison (If Required) <p>If PRI thrust is insufficient to maintain level flight at a safe altitude:</p> <ol style="list-style-type: none"> 3. Engine Control Switch - SEC <p>[PW200] ENGINE FAILURE/AIRSTART</p> <ol style="list-style-type: none"> 1. Zoom (If at Low Altitude) 2. Stores - Jettison (If Required) 3. Throttle - OFF 4. Airspeed - As Required 5. EEC/BUC Switch - As Required. <p>When RPM Is Between 40-25 Percent And FTIT Is Below 700 Degrees:</p> <ol style="list-style-type: none"> 6. Throttle - IDLE 7. JFS - Start 2 When Below 20,000 Feet and 400 KIAS <p>[PW220] ENGINE FAILURE/AIRSTART</p> <ol style="list-style-type: none"> 1. Zoom (If At Low Altitude) 2. Stores - Jettison (If Required) 3. Throttle - OFF 4. Airspeed - As Required. <p>When RPM Is Between 50-25 Percent And FTIT Is Below 700 Degrees:</p> <ol style="list-style-type: none"> 5. Throttle - IDLE 6. JFS - Start 2 When Below 20,000 Feet and 400 KIAS <p>[PW229] ENGINE FAILURE/AIRSTART</p> <ol style="list-style-type: none"> 1. Zoom (If at Low Altitude) 2. Stores - Jettison (If Required) 3. Throttle - OFF, then Midrange 4. Airspeed - As Required 5. JFS - Start 2 When Below 20,000 Feet and 400 KIAS
<p>[PW 200] LOW THRUST ON TAKEOFF/AT LOW ALTITUDE (NON-AB)</p> <ol style="list-style-type: none"> 1. EEC/BUC Switch - Off. <p>If Thrust Is Still Insufficient:</p> <ol style="list-style-type: none"> 2. Throttle - MAX AB. 	<p>[GE100/I29] ENGINE FAILURE/AIRSTART</p> <ol style="list-style-type: none"> 1. Zoom (If at Low Altitude) 2. Stores - Jettison (If Required) 3. Engine Control Switch - SEC, Then PRI

<p>If Thrust Is Still Insufficient:</p> <ol style="list-style-type: none">Throttle - MILEEC/BUC Switch - BUC <p>If Nozzle Fails To Close After Transferring To BUC Or If Thrust Is Still Insufficient:</p> <ol style="list-style-type: none">EEC/BUC Switch - OFFThrottle - MAX ABStores - Jettison (If or When Required) <p>[GE100/129] LOW THRUST ON TAKEOFF / AT LOW ALTITUDE (NON-AB)</p> <ol style="list-style-type: none">Throttle - AB.Stores-Jettison (If Required). <p>If thrust is insufficient to maintain level flight at a safe altitude:</p> <ol style="list-style-type: none">Engine Control Switch – SEC, then PRI	<ol style="list-style-type: none">Airspeed – As RequiredJFS – Start 2 When Below 20,000 Feet and 400 KIAS <p>OUT-OF-CONTROL RECOVERY</p> <ol style="list-style-type: none">Controls - ReleaseThrottle - IdleFLCS Switch – RESET (Digital FLCS Only) <p>If In An Inverted Deep Stall:</p> <ol style="list-style-type: none">Rudder - Opposite Yaw Direction (Analog FLCS Only). <p>If Still Out-Of-Control:</p> <ol style="list-style-type: none">MPO Switch - OVRD and Hold <p>After Yaw Rotation Stops or is Minimized:</p> <ol style="list-style-type: none">Stick - Cycle in Phase
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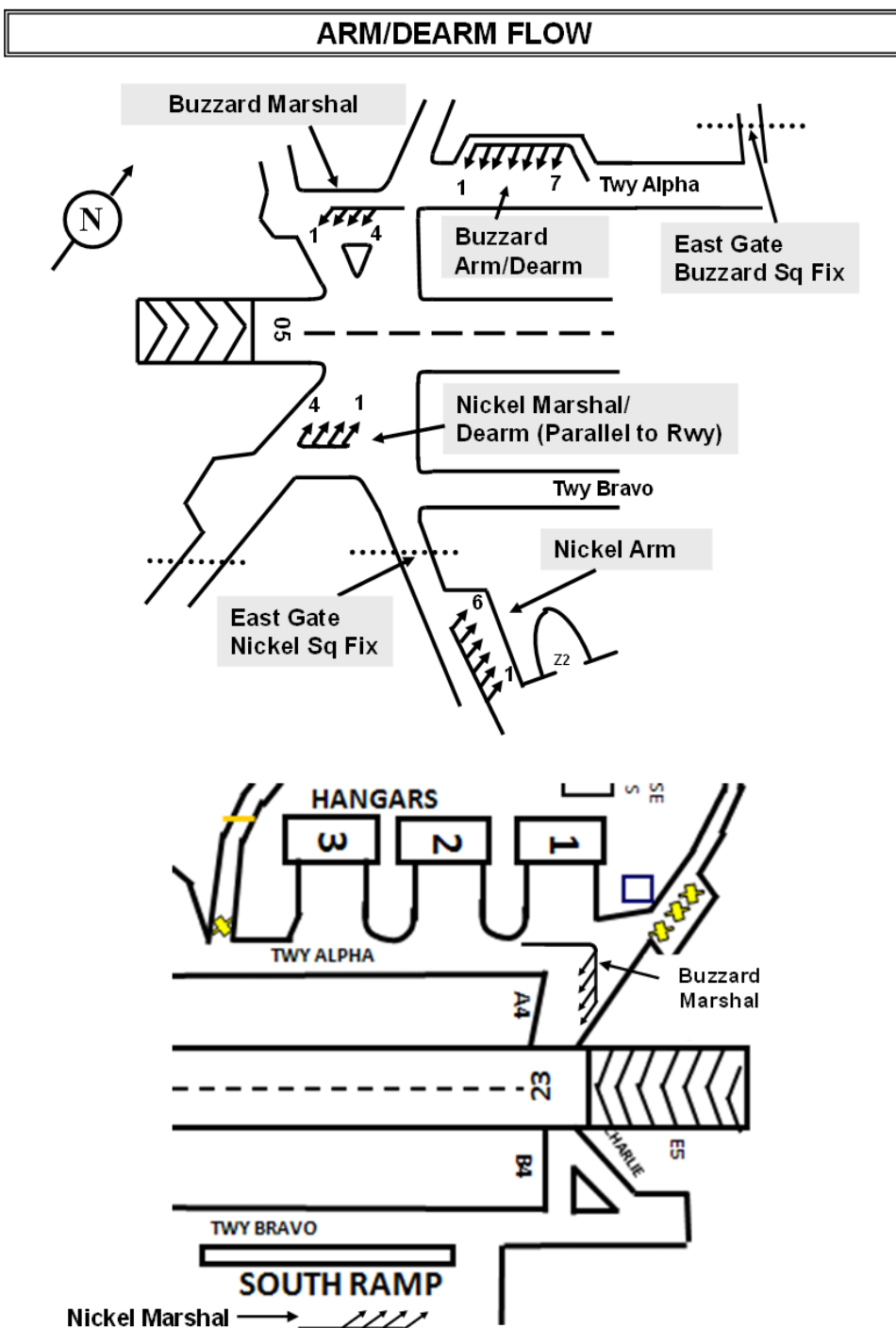
Attachment 5 (Added-AVIANOAB)

AVIANO AIRFIELD DIAGRAM



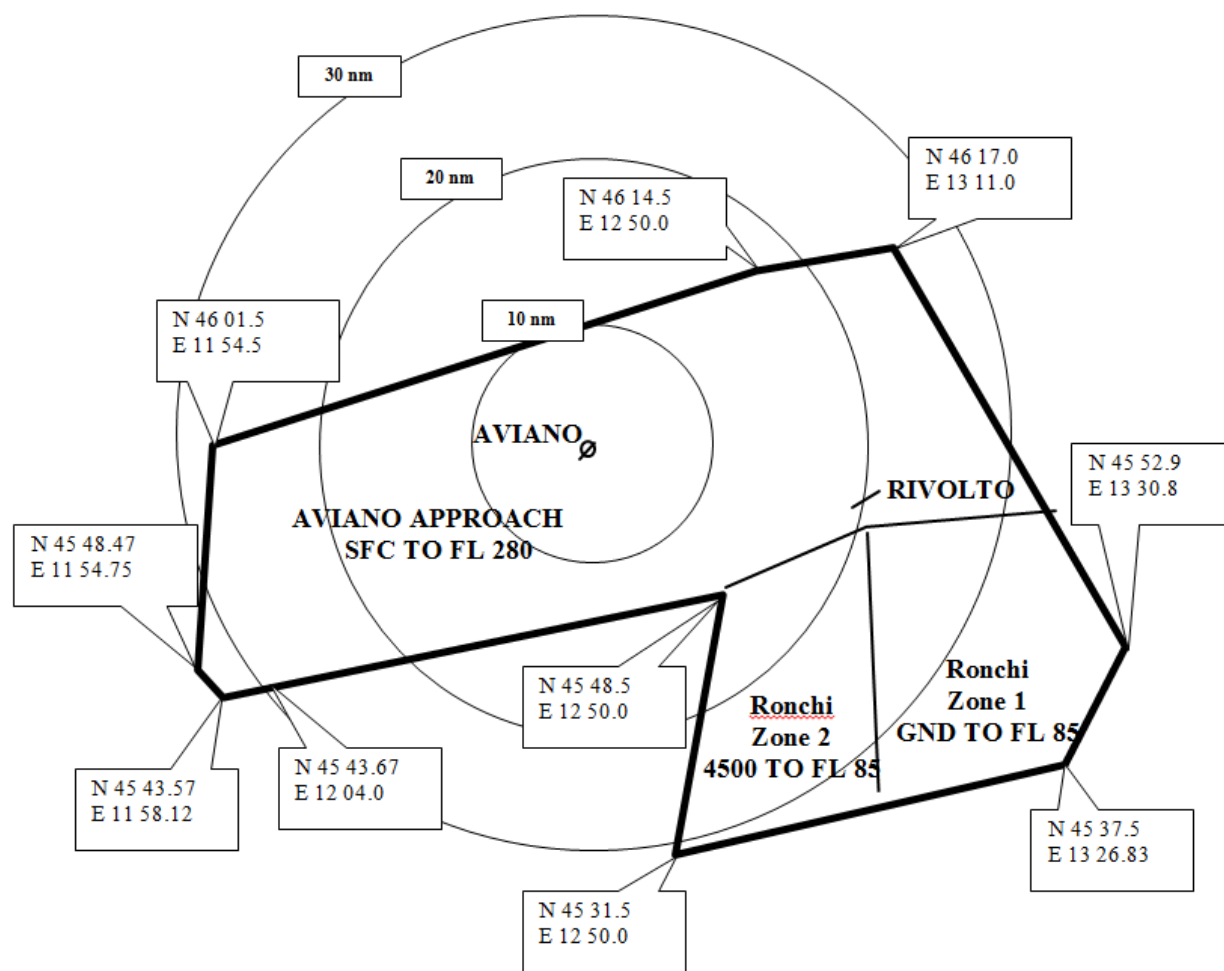
Attachment 6 (Added-AVIANOAB)

ARM / DE-ARM AREAS



Attachment 7 (Added-AVIANOAB)

AVIANO RAPCON AIRSPACE



Attachment 8 (Added-AVIANOAB)

RWY 05 DEPARTURE PROCEDURES & NOISE ABATEMENT

RWY 05 DEPARTURE PROCEDURES

ALL Departures:

Climb and maintain between 700' and 1500' MSL until past departure end of runway, cancel AB at 300 KIAS unless required for safety of flight, then...

VFR Departure (WX >1500'/5km but < 5000'):

Fly runway heading until 2 DME, then turn right direct to EAGLE, completing turn within 5 DME. Resume VFR departure as cleared and maintain VMC.

IFR Departure (WX < 5000'/5km or Night):

Fly runway heading until 2 DME. At 2 DME (not earlier than 1400' MSL at night or when the weather is < 1500'/5km) initiate a climbing turn to the specified SID heading/track.

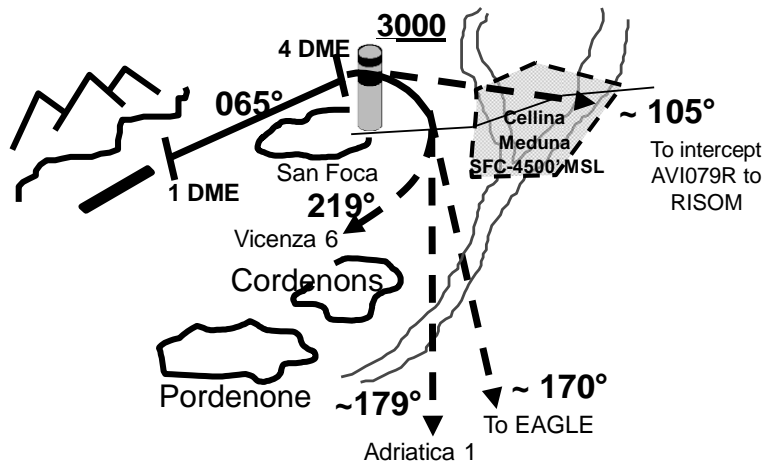
- **Risom/Roska departure:** Use maximum of 30 degrees bank. Ensure altitude restriction over Cellina Meduna is met (6,000' MSL at 6 DME) if vectored off of the departure procedure (i.e. "direct to Roska passing 3000").
- **All other departures:** Remain within 5 DME of AVI TACAN in order to avoid Cellina Meduna firing range. Resume Aviano SID as cleared.

VFR or DAY IFR Departure (WX ≥ 5000'/5km):

Execute the Noise Abatement Procedure depicted below, then resume the VFR departure or IFR SID as cleared.

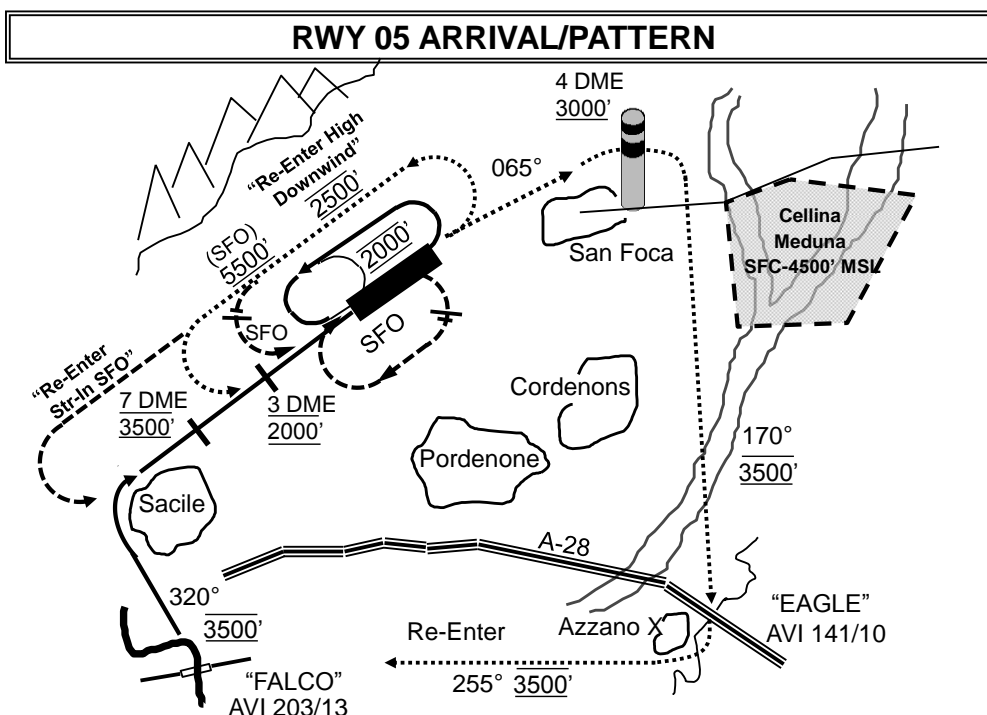
RWY 05 NOISE ABATEMENT PROCEDURE (DAY >5K'/5km)

Fly runway heading until 1 DME, then turn right to heading 065 to stay North of the town of San Foca. Cross 4 DME at or above 3,000' MSL and turn right to desired heading while remaining East of San Foca tower. When activated, avoid Cellina Meduna either laterally by completing the turn within 5 DME, or vertically by climbing above 6,000' MSL by 6 DME. Resume VFR/IFR departure as cleared. Pilots will maintain VMC throughout the procedure. Wingmen will fly the same ground track, and will not use cutoff to rejoin until southbound, past San Foca. This procedure is not authorized at night or when weather is less than 5,000'/5 km



Attachment 9 (Added-AVIANOAB)

RWY 05 ARRIVAL/PATTERN

**VFR Arrival**

When cleared by ATC, depart FALCO heading 320° at 3,500' MSL. Avoid Sacile by offsetting to the north. At 7 DME, begin descent to 2,000' MSL. Arrive at 2,000' MSL by 3 DME Initial.

STRAIGHT-IN: Depart FALCO heading 320° and descend to 2000' MSL turning extended final.

Overhead Traffic Pattern

Initial: 2,000 MSL @ 300 KIAS **Tac Initial:** 400 KIAS & 6K LAB

Break: Left (North) **Closed Pattern:** Climbing Left turn at DER to Left Downwind

VFR Pattern Re-Entry

"RE-ENTER EAGLE" is via the Noise Abatement ground track to EAGLE at 3,500' MSL, then to point FALCO.

"RE-ENTER HIGH DOWNWIND" is entered from a closed/downwind position. Climb to 2,500' MSL, remain within 5 DME, & intercept a 3 DME initial descending to 2,000' MSL. If traffic is approaching 7 DME Initial, maintain 2,500' MSL, & coordinate w/ Twr to extend high downwind.

"RE-ENTER HIGH DOWNWIND FOR X NM STRAIGHT-IN" is entered from a closed or downwind position. Climb to 2,500' MSL and proceed to the requested NM. Begin descent to 2,000' MSL turning left base for extended final. Clear for traffic $\geq 2,000'$ MSL.

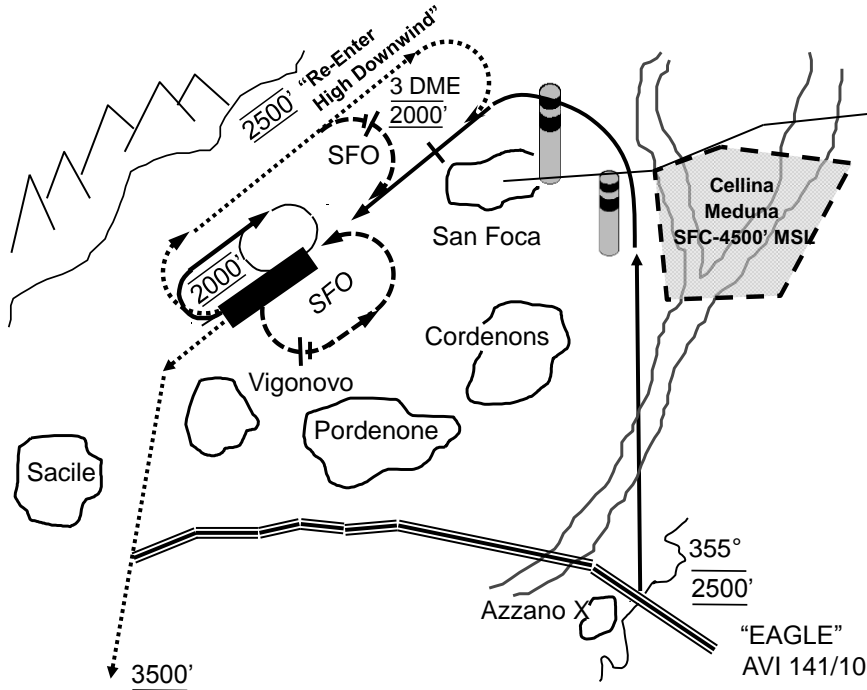
Local Climbout

Applicable to RWY 05 only. Fly runway heading, climb between 700-1500' MSL until DER. If weather is $\geq 5000/5\text{km}$, execute Noise Abatement Procedure, climb to 3000' and heading 180°. Otherwise, maintain runway heading until 2 DME, then turn right heading 180°, climb and maintain 3000 feet. Complete turn within 5 DME to avoid Cellina Meduna controlled firing area.

Attachment 10 (Added-AVIANOAB)

RWY 23 DEPARTURE/ARRIVAL/PATTERN

RWY 23 DEPARTURE/ARRIVAL/PATTERN

**VFR Departure**

Maintain between 700' and 1,500' MSL until past departure end, then climb to 3,500' MSL or higher and turn left to FALCO. Expedite climb to 3,500' MSL or above. Avoid the towns of Vigonovo and Sacile.

IFR Departure

Comply with ATC issued SID instructions.

VFR Arrival

Entry point is point EAGLE. When cleared by tower, depart point EAGLE heading 355° at 2,500' MSL. Turn to parallel the dry river bed. Begin a left descending turn to initial around San Foca tower (2nd red striped tower), descending to 2,000'.

Overhead Traffic Pattern

Initial: 2,000 MSL @ 300 KCAS **Tac Initial:** Prohibited. **St-In:** Emer only -same track
Break: Right (North) **Closed Pattern:** Climbing Right turn at DER to Downwind

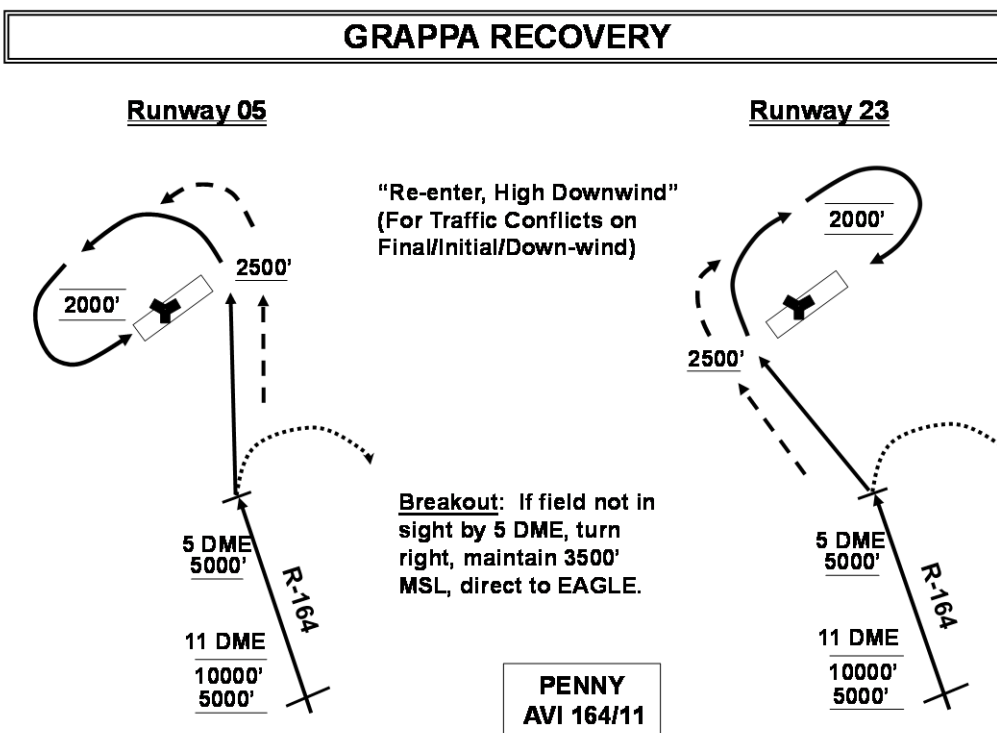
VFR Pattern Re-Entry

"RE-ENTER FALCO" is via FALCO, then EAGLE. Maintain between 700' and 1,500' MSL until DER, turn left direct FALCO, climb to 3,500'. Avoid the towns of Sacile and Vigonovo. Descend to 2,500' en-route to EAGLE.

"RE-ENTER HIGH DOWNWIND" is entered from a closed/downwind position. Climb to 2,500' MSL, remain within 5 DME, & intercept 3 DME initial descending to 2,000' MSL. If traffic is still a factor, maintain 2,500' MSL and report "High Initial for High Downwind Re-entry."

Attachment 11 (Added-AVIANOAB)

GRAPPA RECOVERY

**VFR Arrival**

Request Grappa Recovery upon initial contact with Aviano approach control:

"Viper 1, 4-ship, 20 NM South with Alpha, Direct Penny, Grappa Recovery, 10,000."

Depart Penny in the block 5,000'-10,000' MSL, or as directed, direct Aviano. At 5 DME (AVI 164/5), turn right (left for Rwy 23) towards the outside of the departure end of the runway and avoid over flight of the base, begin descent, maintain at or above 2,500' MSL until crossing runway centerline, then turn left (right for Rwy 23) to arrive on inside downwind at 2,000' MSL for an overhead pattern.

VFR Pattern Re-Entry

For traffic deconfliction on initial, final, or inside downwind, maintain at or above 2,500' MSL and re-enter initial via "Re-Enter High Downwind" procedures.

Breakout

If field is not in sight by 5 DME or directed to breakout, execute a right turn at 3,500' MSL and re-enter via EAGLE then FALCO. Contact Aviano Approach.

Restrictions

WX: 6,000'/8 Km; Daylight Operations Only.

Do not overfly the base during the inbound portion of the recovery.

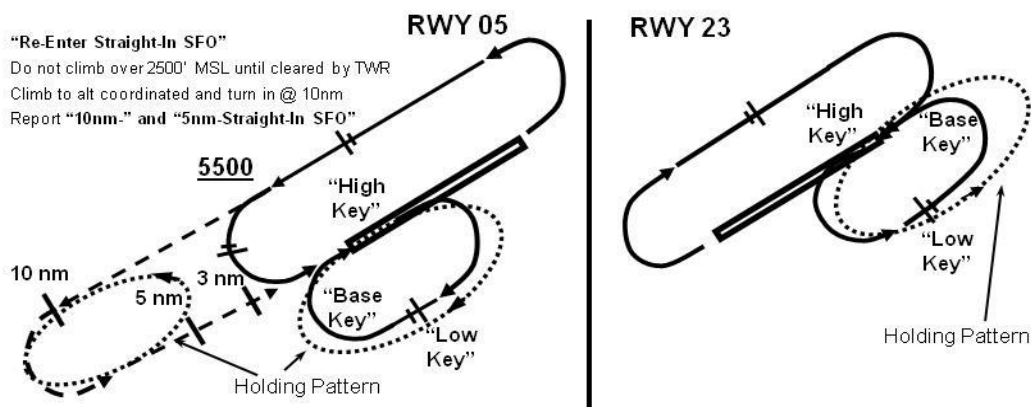
Airspeed: 400 KCAS max.

Intraflight formation limited to elements of two-ships. Wingmen fly LAB to Wedge formation and not greater than 1nm. Wingmen will gain spacing in the turn to downwind.

Note: Number of formations concurrently flying the Grappa Recovery limited to Tower workload

Attachment 12 (Added-AVIANOAB)

SFO PATTERN



- WX for all SFOs is day, VMC, 8km visibility, ceiling 1000' above entry altitude.
- **High Key is 10,000' MSL unless coordinated differently with ATC.**
- Request Low Key (3,500' MSL Minimum) if weather prevents High Key entry.
- Rwy 05: Be $\geq 5500'$ MSL prior to turning toward Rwy; Remain w/in 3 nm (St-in SFO conflict)
- Hold at High Key (if req) at approach end (as depicted).
- For str-in SFOs, hold from 5nm to 10nm, aligned with the runway, left hand turns.

	A/A Configuration (1000# of Stores)		A/G Configuration (3000# of Stores)	
FUEL	A/S LG UP/DN/MIN	ALT (AGL) HIGH/LOW/BASE	A/S LG UP/DN/MIN	ALT (AGL) HIGH/LOW/BASE
7000	235 / 225 / 215	10.5 / 4.8 / 2.0	245 / 235 / 225	11.5 / 5.3 / 2.0
6000	230 / 220 / 210	10.0 / 4.5 / 2.0	240 / 230 / 220	11.0 / 5.0 / 2.0
5000	225 / 215 / 205	9.5 / 4.3 / 2.0	235 / 225 / 215	10.5 / 4.8 / 2.0
4000	220 / 210 / 200	9.0 / 4.0 / 2.0	230 / 220 / 210	10.0 / 4.5 / 2.0
3000	215 / 205 / 195	8.5 / 3.8 / 2.0	225 / 215 / 205	9.5 / 4.3 / 2.0
2000	210 / 200 / 190	8.0 / 3.5 / 2.0	220 / 210 / 200	9.0 / 4.0 / 2.0
1000	205 / 195 / 185	7.5 / 3.3 / 2.0	215 / 205 / 195	8.5 / 3.8 / 2.0

Stores Weights (1F-16CM-1-1):

CL Tank * (Empty)	557 lbs
Wing Tank* (Empty)	475 lbs (each)
SUU-20A/A* (Empty/Full)	619/673 lbs
WPNS PYLON	289 lbs (each)
NAV/TGT Pod	429/595 lbs
ECM Pod	559 lbs
LNCHR**/MRL **	98/113 lbs
AIM-9M/AIM-120B	195/341 lbs
TER	118 lbs

* Includes pylon.

** Includes adapter for stations 2 or 8 (AIM-9s & LNCHRs for 1/9 included in A/C basic weight).

Nice to Know Numbers:

MAX Rng	- 7 AOA any GW
	- 7 NM/5000 Ft
	- 200 KIAS + 5 KIAS/1000 lbs
	over 1000 lbs C-Model (0 D-Model)
MAX End	- 170 KIAS + 5 KIAS/1000 lbs
	over 1000 lbs C-Model (0 D-Model)

Attachment 13 (Added-AVIANOAB)

LOCAL AIRSPACE SUMMARY

Airspace	Altitudes	Maximum Airspeed	GCI or Radar	Chaff/Flare Authorized
Speedy A	5,000 MSL to FL125	None	Primo, Padova	Yes
Speedy B	FL125 to FL250	None	Primo, Padova	Yes
Zita N	As assigned, FL050 or 2,000' AGL, whichever is higher-FL370	.95 Mach	Padova, Aviano	No
Zita S	As assigned, FL130-FL370	.95 Mach	Same as above	No
Sara A & B	As assigned, FL125 to FL240	.95 Mach*	Pioppo, Padova	No*
Lola	As assigned, FL155 to FL245	.95 Mach	Pioppo, Padova	No
Foligno	As assigned, FL115-245 (5000' AGL min)	.95 Mach	Roma	No

Speedy Notes:

Pilots will confirm the altitudes authorized upon initial contact with GCI or when cleared to tactical by Padova. Five minutes before departing Speedy, request clearance to exit. Expect clearance via AA3 to Roska then Penny. Do not exit Speedy until coordinated with Padova.

“Low recovery” is at FL 100

“High recovery” is at FL 200

Aircraft approaching within 3 nm of the boundaries of Speedy will be given position advisories and an appropriate heading.

Zita Notes:

VFR Entry/Exit. On departure, climb above 5,000' MSL. Aviano Departure will hand you off to working frequency (UHF 16). Contact Aviano Approach before departing ZITA.

IFR Entry/Exit. Fly the assigned SID/vectors and call when established in Zita airspace. Exit by published penetration. The proximity of the Buffer Zone, the Austrian border, and civilian airways require extra attention to position at all times. Northern Zita has mountains up to 11,000' MSL. Be aware that flight below 13,000' MSL is not allowed west of the E1200 line.

Lola Notes:

VFR Entry/Exit. Not permitted. If unable to obtain an IFR clearance for RTB, maintain VMC, select an appropriate hemispherical altitude, and advise Padova.

IFR Entry/Exit. All flights will use the Vicenza 6 SID to Villafranca. After passing Vicenza, request clearance into the area. Request IFR clearance five minutes before desired exit time.

Sara Notes*:

Entry/Exit. Coordinate with Padova. Notify controlling agency 5 minutes prior to RTB with intentions. Chaff/Flare authorized over water only. Supersonic flight authorized beyond 12nm from coast with a vector diverging at least 20° away from the coast.

Foligno Notes:

Entry/Exit. Coordinate with Roma. Notify controlling agency 5 minutes prior to RTB with intentions.

Attachment 14 (Added-AVIANOAB)**31 OG SONIC BOOM PROCEDURES**

A14.1. (AVIANOAB) REFERENCES: AFI 13-201, paras. 2.11, 3.4, AFI 11-421 para 1.5.21, Area Planning, AP/2 (Italy), AFI 11-2F-16V3_AVIANOABSUP, para. 8.1.4.2.4.

A14.2. (AVIANOAB) PURPOSE: The purpose of the Sonic Boom Reporting System is to ensure proper recording and processing of sonic boom activity. For disturbance complaints or claims of damage, the investigating agent is legal.

A14.3. (AVIANOAB) EXTERNAL CONTACTS: Stan/Eval, Base Legal Office, Command Post, Public Affairs, Wing Scheduling, Federal Aviation Agency, and Host Nation Agencies (ITAF BOC).

A14.4. (AVIANOAB) FREQUENCY: Whenever a scheduled or unscheduled Sonic Boom occurs over the Italian landmass. For scheduled sonic booms see section 2, ITAF rules for Functional Check Flights.

A14.5. (AVIANOAB) SECTION 1: UNSCHEDULED SONIC BOOM ACTIVITY

A14.5.1. (AVIANOAB) PILOT RESPONSIBILITIES:

A14.5.1.1. (AVIANOAB) Report sonic boom ASAP. If noticed in debrief, notify FS/Top 3 immediately. If noticed while airborne, notify the controlling agency ASAP and FS/Top 3 after landing. Information to provide include maximum mach, duration, flight level, and best available coordinates.

A14.5.1.2. (AVIANOAB) Pilots will save all RMCs and URITS cartridges.

A14.5.1.3. (AVIANOAB) Pilots will fill out the AF form 121, Sonic Boom Log, and the Italian Supersonic Flight Report. These forms will be reviewed by the FS/Top 3 and given to the appropriate SARM section.

A14.5.2. (AVIANOAB) FS/TOP 3 RESPONSIBILITIES:

A14.5.2.1. (AVIANOAB) Ensure the Italian Supersonic Flight Report and AF Form 121 are filled out completely and given to the appropriate SARM section.

A14.5.2.2. (AVIANOAB) FS/Top 3 will call the OG/CC ASAP with details of the Sonic Boom activity.

A14.5.3. (AVIANOAB) SARM RESPONSIBILITIES:

A14.5.3.1. (AVIANOAB) Ensure the pilot fills out:

A14.5.3.1.1. (AVIANOAB) AF Form 121, Sonic Boom Log (*attach 16*)

A14.5.3.1.2. (AVIANOAB) Italian Supersonic Flight Report (*attach 15*)

A14.5.3.2. (AVIANOAB) Enter the AFTO FORM 781 flight information into ARMS.

A14.5.3.3. (AVIANOAB) Fill out the ARMS data fields on Sonic Boom Activity Window. <Flight Module, Sonic Boom Tab>

A14.5.3.4. (AVIANOAB) Fax the Italian Supersonic Flight Report (*attach 15*) to Wing Scheduling, (632-8527). **Note:** Wing Scheduling is responsible for providing an info

copy to the 31 OG/CC and upon confirmation of receipt they will fax attachment 15 to the Host Nation Agency (ITAF BOC) and Airfield Management.

A14.5.3.5. (AVIANOAB) Provide copies of AF Form 121 and AFTO FORM 781 to the HARM office.

A14.5.3.6. (AVIANOAB) File a copy of each form (copies) IAW AP/2 for a period of five years.

A14.5.4. (AVIANOAB) HARM RESPONSIBILITIES:

A14.5.4.1. (AVIANOAB) Confirm the AFTO FORM 781 related to the supersonic activity is in ARMS.

A14.5.4.2. (AVIANOAB) Process the Sonic Boom transmittal list from the Reports Module. (last report)

A14.5.4.3. (AVIANOAB) Ensure the Wing Scheduling office received a copy of the Italian Supersonic Flight Report.

A14.5.4.4. (AVIANOAB) File forms IAW Italian AP/2 for a period of five years.

A14.5.5. (AVIANOAB) WING SCHEDULING RESPONSIBILITIES:

A14.5.5.1. (AVIANOAB) Provide the 31 OG/CC an info copy of all Italian Supersonic Flight Reports immediately.

A14.5.5.2. (AVIANOAB) Upon confirmation from 31 OG/CC or representative, forward a copy to Airfield Management and ITAF BOC. Obtain signature of receipt on a copy of the form to be retained by ITAF BOC personnel.

A14.5.5.3. (AVIANOAB) File forms IAW AP/2 for a period of five years.

A14.5.6. (AVIANOAB) TDY/DEPLOYED SUPERSONIC FLIGHT ACTIVITY:

A14.5.6.1. (AVIANOAB) The pilot is required to notify their respective SARM section if a supersonic flight occurs while they are off station.

A14.5.6.2. (AVIANOAB) A complete AF FORM 121 must be provided upon return to home station or via fax/email if the TDY duration is longer than 2 weeks.

A14.5.6.3. (AVIANOAB) The Italian Supersonic Flight Report is only required for supersonic flights in Italian airspace. Follow SARM/HARM procedures listed in Section 1.

A14.6. (AVIANOAB) SECTION 2: SCHEDULED/APPROVED FCF-SUPERSONIC ACTIVITY

A14.6.1. (AVIANOAB) The main goal of an FCF (Maintenance test) is to perform a functional check after completing inspections or maintenance to make sure the aircraft is airworthy and capable of mission accomplishments.

A14.6.2. (AVIANOAB) LITSA 78 is the only airspace authorized for supersonic flights over the Italian land mass. IAW AP/2, supersonic flight is authorized on specific order of competent military authority and requires prior coordination with the pertinent Italian Military Region Operations Center (ROC).

A14.6.3. (**AVIANOAB**) Supersonic flight requests must be submitted to 31 OSS/OSOS NLT 1000z the day prior to the flight if time permits, but in all cases NLT 24 hours prior to flight.

A14.6.4. (**AVIANOAB**) After an approved FCF-Supersonic Flight is flown, the pilot must fill out the Italian Supersonic Flight Report (*attach 15*) within thirty minutes of arrival back in the squadron. Follow SARM/HARM procedures listed in Section 1.

Attachment 15 (Added-AVIANOAB)
ITALIAN SUPERSONIC FLIGHT REPORT

Required information extracted from Area Planning (AP/2) Italy

Type Aircraft: _____

Wing/Squadron: _____

Date: _____

Call Sign: _____

Mission Number: _____

Date of Flight: _____

FCF ONLY	<u>DEDICATED ZONE</u>	<u>SUPERSONIC RUN (LOWEST FLT LEV)</u>
SUPERSONIC RUN	<u>START</u>	<u>STOP</u>
TIME (Z)		
POSITION		
ALTITUDE		

Controlling Agency: _____

Frequency: _____

IFF/SIF settings: _____

Notes: _____

DO/TOP-3 Name:_____ Signature:_____

Note: Forward to 31 OSS/OSOS (Fax 632-8527). 31 OSS/OSOS will distribute to 31 OG/CC first and then to Airfield Management and the Italian BOC.

For official use only

SONIC BOOM LOG

[illegible]

Attachment 17 (Added-AVIANOAB)**31 FW LOW-LEVEL PROCEDURES**

A17.1. (AVIANOAB) Scope. The purpose of this attachment is to establish procedures for 31 FW low level operations in Italy. This read file supplements operational directives and establishes local procedures for all pilots assigned or attached to the 31 FW.

A17.2. (AVIANOAB) Scheduling. Low level flights are permitted Mon –Fri 0700L-2300L. Low level flights are not permitted Saturday, Sunday, or on Italian Holidays. A maximum of 25% of weekly scheduled sorties are allowed to be low level. AVI-08 and AVI-11 will be the only stereo routes allowed for 31 FW aircraft until further notice.

A17.3. (AVIANOAB) Low Level Structure.

A17.3.1. (AVIANOAB) General. The low level structure in Italy is defined as below 2000' AGL. Italian directives refer to low level flight as BBQ or BOAT. In order to operate below 2000' AGL in Italy, aircraft must adhere to the published flow directions based on odd or even days. Refer to MILAIP and Italian LFC (Low Flying Chart) for specifics on flow direction. Flow directions vary based on geographic area. For example, the flow in Marche Nord is NW to SE on odd days, SE to NW on even days. The exception to flow direction is turns up to 360° are allowed at low level for rejoins, safe escapes, threat reactions, or other specific training tasks. In order to flow opposite to the published flow direction, the aircraft must be established above 2,000' AGL. Minimum altitude is 1000' AGL unless established in a Tactical Area. Low level maximum airspeed is 480 KCAS, except for IP-TGT runs when aircraft may increase airspeed to 510 KCAS or 560 KCAS if performing a loft attack. AB use is prohibited when low level except for safety of flight or for specific training tasks (pops, threat reactions, etc.)

A17.3.2. (AVIANOAB) Tactical Areas. There are multiple Tactical Areas in Italy. AVI-08 and AVI-11 utilize the Marche Nord tactical area with a standard delay of 20 minutes. When established in a tactical area, the low level structure extends from 500' AGL to 2,000' AGL. Note: Aircraft must adhere to the published flow direction when below 2,000' AGL at all times, regardless of whether or not established in a Tactical Area.

A17.3.3. (AVIANOAB) Firing Ranges. There are multiple Firing Areas located throughout Italy. For information on the boundaries reference MILAIP, section ENR 5.2.1-1 and Manuale Boat, *Low Flying Manual*. These areas have specified vertical and lateral limits for the purpose of conducting military firing activities on a recurring basis. Activation of such areas will be notified each time by NOTAM, and can be found on the Wing Drive among the ITAF NOTAMs.

A17.3.3. (AVIANOAB) 1 When firing areas are activated, IFR flight shall overfly such areas at least 2000' above the upper limit, unless otherwise published.

A17.3.4. (AVIANOAB) VFR Rules. From 2,000' AGL to FL 195 aircraft may operate VFR (VOAT). Maximum speed when operating VFR is .95 mach. When operating VFR, aircraft will adhere to the following VFR hemispheric altitudes: From MH 090°-269°, odd thousands + 500'. From MH 270-089, even thousands +500'.

A17.4. (AVIANOAB) Mission Planning

A17.4.1. **(AVIANOAB)** Stereo Route. PEX will indicate in the remarks section which stereo route the flight is filed for. Odd days will use AVI-11; even days will use AVI-08.

A17.4.2. **(AVIANOAB)** NOTAMS. Pilots must check the “BBQ NOTAMS” (Italian low level NOTAMs) prior to flying low level in Italy. Base Ops will post daily ITAF BBQ NOTAMs on the “wing” drive at W:\31OG\ITAF NOTAMS. FS Intel will plot the BBQ NOTAMS daily on the master NOTAM map located in the squadron mission planning area and . Flight members will check the master NOTAM map and transfer applicable NOTAM information to their strip charts. Pilots will update the date on the strip charts each time this is accomplished. The mission flight lead is responsible for ensuring all mission planning materials are updated before flight.

A17.4.3. **(AVIANOAB)** CHUM. The Manuale BOAT Low Flying Manual (green book) contains all CHUM information for Italian low-level operations. It is published every six months. Each squadron will maintain a master LFC-Italy map that is updated using the Manuale BOAT. FS/Intel will update this map daily with the Italian BBQ (low-level) NOTAMS. ECHUM is not reliable and will not be used for mission planning. Charts will be updated by hand with CHUM information from the BOAT manual and BBQ NOTAMs. The BBQ NOTAMs will address new CHUM between publication cycles. Prior to flight, pilots will ensure that squadron developed strip charts are updated with CHUM information to match the squadron master LFC-Italy map.

A17.4.4. **(AVIANOAB)** Maps. Aircrews will utilize strip charts developed from current 1:500,000 LFC-Italy maps. IAW AFI11-202V3_USAFESUP, NGA CADRG products from PFPS/FV may be utilized for reference only. FS/DOW will generate strip charts in a smart pack format for mission planning and flight. This pack will include a “big picture” map with divert field information. All flight members will have a current copy of strip charts to fly with.

A17.4.5. **(AVIANOAB)** Attack planning. The FS/DOW generated strip charts will not contain preplanned attacks. These attacks must be planned by each individual flight.

A17.4.5.1. **(AVIANOAB)** Flights will not pop into the VFR structure (above 2,000’ AGL) until cleared by Padova Mil. If the flight is planning a pop attack that extends out the top of the low level structure (>2,000’ AGL), a low show backup attack will be planned that keeps the flight below 2,000’ AGL. If the primary attack keeps the flight below 2,000’ AGL, no backup attack plan is required. The low show backup is required in case Padova Mil denies the use of VFR altitudes above 2,000’ AGL for the pop attack. Multiple attacks on the same target may be executed in designated Tactical Areas (March Nord, etc.) if the run-in axis is changed by at least 30 degrees.

A17.5. (AVIANOAB) Ground Operations

A17.5.1. **(AVIANOAB)** Flights will be scheduled for an IFR departure with a clearance limit of Chioggia. Flights may depart IFR and cancel as soon as practical or request a VFR departure with Aviano Ground.

A17.5.2. **(AVIANOAB)** IFF procedures are IAW local Chapter 8 and the 31 FW standards. If departing VFR with no assigned IFF code, the flight will squawk 2600 in sequence.

A17.6. (AVIANOAB) Route Procedures

A17.6.1. **(AVIANOAB) Weather Requirements.** Low level weather requirements are as follows: Ceiling of 2000' or 500' above planned altitude (whichever is higher), 1nm horizontal cloud clearance, and 8km visibility. If LOWAT is planned, 11-214 minimums apply (2000' vertical and 1nm horizontal cloud clearance, 8km/5nm visibility, and a discernable horizon).

A17.6.2. **(AVIANOAB) Flight leads** will advise controlling agency of intent to cancel IFR (if applicable) and descent in to low level structure. The flight will descend to 1,000' AGL as a default.

A17.6.3. **(AVIANOAB) G-Awareness Exercise.** G-Awareness exercise will be accomplished IAW AFI 11-2F-16V3 and AFTTP 3-3V5.

A17.6.4. (AVIANOAB) Over-flight Restrictions

A17.6.4.1. **(AVIANOAB)** Plan your route to remain at least 1.5 NM either side of any town shown on the LFC 1:500,000 chart. Climb to 2,000' above if you can not avoid them.

A17.6.4.2. **(AVIANOAB)** Avoid Carpenga Range in Marche Nord by 1nm up to 7000' MSL at all times. Carpegna Range max ord. altitude is 6,300' MSL.

A17.6.4.3. **(AVIANOAB)** Flights are limited to one attack on a given axis per target. For multiple attacks on the same target, change run in axis by a minimum of 30° for each attack.

A17.6.4.4. **(AVIANOAB)** Do not overfly the following:

A17.6.4.4.1. **(AVIANOAB)** Areas specified by NOTAM

A17.6.4.4.2. **(AVIANOAB)** "P" and "R" Areas (Zita, Speedy, Foligno, etc.)

A17.6.4.4.3. **(AVIANOAB)** 1 NM abeam and 1,500 ft above: hospitals, jails, industries, known obstacles (ski lifts, antennas....).

A17.6.4.4.4. **(AVIANOAB)** Glider : 2 NM

A17.6.4.4.5. **(AVIANOAB)** Hang-glider : 1 NM or 1,000 ft AGL

A17.6.4.4.6. **(AVIANOAB)** Parachute drops: 1.5 NM

A17.6.5. (AVIANOAB) Communications

A17.6.5.1. **(AVIANOAB)** 31 FW aircraft will be pushed to appropriate frequencies by the controlling agencies. Flights will check in with call sign, flow direction and altitude. Flights may not get a response from the controlling agency due to line of sight. However, flights will make every effort to establish communications with the controlling agency. Flights may continue to operate along the flight planned route without radio contact, to include entering Marche Nord, but will continue to attempt contact. Once contact is reestablished, confirm your intentions with the controlling agency. The FS/DOW strip charts contain approximate locations for frequency changes, controlling agencies, and frequencies that will be used. These are shown on the strip charts as green lines.

A17.6.5.2. **(AVIANOAB)** Approaching Marche Nord, flights will contact Padova Mil on UHF CH 5 and inform them of the following:

A17.6.5.2.1. **(AVIANOAB)** Estimated time of delay in Marche Nord

A17.6.5.2.2. **(AVIANOAB)** Requested VFR altitude above Marche Nord (“Viper 01 request Marche Nord 500’ AGL to FL180, for the next 20 minutes”). Flights will not pop into the VFR structure (above 2,000’ AGL) until cleared by Padova Mil.

A17.6.5.3. **(AVIANOAB)** Five minutes prior to departing Marche Nord, advise Padova Mil of requested RTB intentions, i.e. VFR, IFR, low level.

A17.6.6. **(AVIANOAB)** LOWAT SPINS

A17.6.6.1. **(AVIANOAB)** LOWAT scenarios will be pre-briefed and will adhere to the following maneuvers:

A17.6.6.1.1. **(AVIANOAB)** Ensure the flight is cleared VFR altitudes above Marche Nord to a minimum of 3,000’ AGL.

A17.6.6.1.2. **(AVIANOAB)** A low block and a high block will be used. The low block is defined as 500’ AGL to 2,000’ AGL. The high block is defined as above 3,000’ AGL.

A17.6.6.1.3. **(AVIANOAB)** Fighters in the low block (below 2K AGL) will adhere to the published flow direction. Red fighters in the low block will adhere to the low-level flow directions and will be non-maneuvering until 3/9 passage, then may react IAW 11-214 LOWAT training rules.

A17.6.6.1.4. **(AVIANOAB)** Fighters in the high block will flow opposite direction at or above 3,000’ AGL and will maintain VFR hemispheric altitudes to the max extent possible prior to the merge (see para. A13.3.3.).

A17.6.6.1.5. **(AVIANOAB)** Flight leads will stress ground avoidance in the low altitude environment during the coordination brief.

A17.6.7. **(AVIANOAB)** Route Abort

A17.6.7.1. **(AVIANOAB)** Pilots may deviate from flow direction long enough to obtain VFR altitude or IFR clearance prior to executing a route abort. For example, in the case of a sloping weather deck, the flight lead may turn the flight around and flow opposite direction in the low level structure momentarily in order to climb to VFR altitude or obtain an IFR clearance. Do not delay a route abort if the need arises.

A17.6.7.2. **(AVIANOAB)** Pilots will avoid the Bologna area by a minimum of 10nm at all altitudes. In addition, Bologna will be used as a divert field only as a last resort.

Attachment 18 (Added-AVIANOAB)**AVIANO STEREO ROUTE FLIGHT PLANS**

A18.1. (AVIANOAB) The source document for this attachment is the Stereo Route Database residing with ITAF Base Ops, and can also be found at 31 OSS/OSOS.

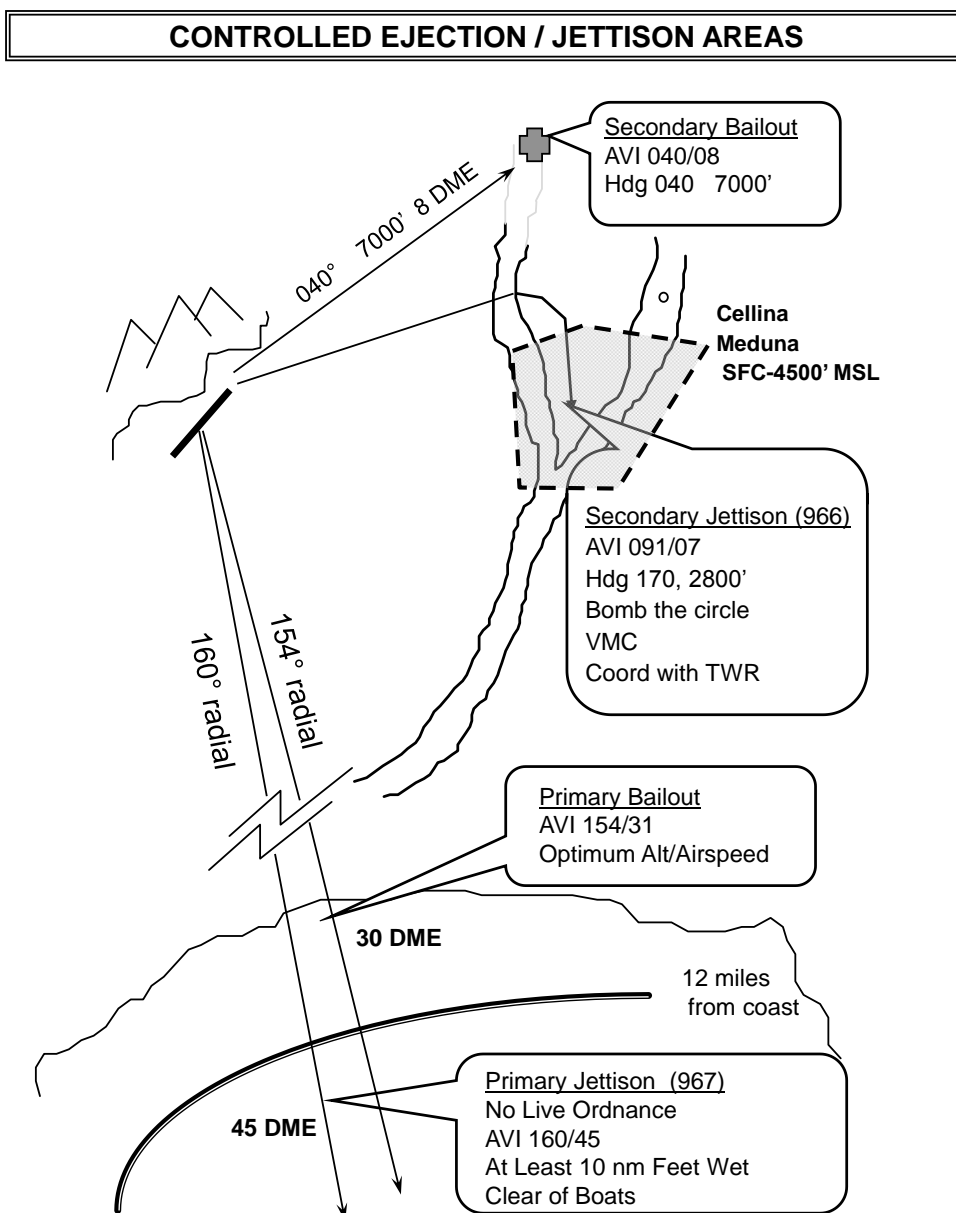
AVIANO STEREO ROUTES		
Clearance	Description	Routing
Single Airspace		
AVI-01	Zita	RISOM1A, ZITA (D1+00), PENNY, LIPA
AVI-02	Speedy	ROSKA1L, AGOMO, SPEEDY (D1+00), AGOMO, ROSKA, PENNY, LIPA
AVI-03	Sara	ROSKA1L, CEV, SARA (D1+00), CEV, ROSKA, PENNY, LIPA
AVI-04	Sara (over land)	VICENZA6, CHI, CEV, SARA (D1+00), CEV, CHI, VIC, SILVA, LIPA
AVI-05	Lola	VICENZA6, VIL, LOLA (D1+00), VIL, VIC, SILVA, LIPA
AVI-06	Foligno	ROSKA1L, CEV, FOLIGNO (D1+00), CEV, ROSKA, PENNY, LIPA
AVI-07	Foligno (over land)	VICENZA6, CHI, CEV, FOLIGNO (D1+00), CEV, CHI, VIC, SILVA, LIPA
AVI-08	LITSA78	RISOM1A, ZITA, TSA78/ZITA, (D1+00), PENNY, LIPA
AVI-09	Aviano CTR	RISOM 1A, EAGLE, AVIANO CTR (D1+00), FALCO, LIPA
AVI-10	IAPs	ROSKA1L, CEV (D0+15), CHI, ISA (D0+15), PENNY, LIPA
Combined Airspace (Initial Clearance to First Airspace listed)		
AVI-11	Speedy/Sara	ROSKA1L, AGOMO, SPEEDY/SARA (D1+00), AGOMO, ROSKA, PENNY, LIPA
AVI-12	Sara/Speedy	ROSKA1L, CEV, SARA/SPEEDY (D1+00), CEV, ROSKA, PENNY, LIPA
AVI-13	Sara/AT Marche Nord	ROSKA1L, CEV, SARA/AT MARCHEN (D1+00), CHI (300C, FL125), CAORLE, PORTOGRUARO, PENNY, LIPA
AVI-14	Sara/Speedy/AT Marche Nord	ROSKA1L, CEV, SARA/SPEEDY/AT MARCHEN (D1+00), ROSKA, PENNY, LIPA
AVI-15	Zita/Lola	RISOM1A, ZITA (D0+30), VIC (350C, FL240), VIL, LOLA (D0+30), VIC, PENNY, LIPA
Ranges (BDU Routing)		
AVI-16	Croatia (Slunji)	RISOM1A, RASUG, UT128, AGOMO, LABIN, PULA, LDR18 (D1+00), OBALA, UT132, ROTAR, UPIRO, PENNY, LIPA
AVI-17	Croatia (Slunji) (over land)	TIBRO1L, PESUT, UL607, OBALA, LDR18 (D1+00) OBALA, BUSET, UM178, EPODO, PESUT, TIBRO, PENNY, LIPA
AVI-18	Slovenja (Pocek)	TIBRO1L, PESUT, LJR6A (D1+00), TIBRO, RISOM, PENNY, LIPA
AVI-19	Slovakia (Malacky)	TIBRO1L, ARNOS, KUCHINA RANGE (D1+00), ARNOS, TIBRO, RISOM, PENNY, LIPA
AVI-20	Germany (Siegenberg)	VICENZA6, UL12, BOLZANO, UM726, BRENO, UM726, MAH, AAR POINT AUSTRIA, EDR136 (D1+00), OLPX, BOLZANO, UL12, VIC, PENNY, LIPA
Low Level Routes		
AVI-21	AT Marche Nord - Even Day (W. Route)	ROSKA1L, CHI (350C, 035), ADRIA (450C, BBQ), MIGLIARO, ARGENTA, IMOLA, AT_MARCHN (D1+00), CHI (300C, FL125), CAORLE, PORTOGRUARO, PENNY, LIPA
AVI-22	AT Marche Nord - Odd Day (W. Route)	VFR DEPT, EAGLE (350C, 035), FALCO, CASTELFRANCO VENETO (450C, BBQ), COSTOZA, SAN BENEDETTO, SABBIONETA, TRAVERSETOLO, VERGATO, PIEVE SANTO STEFANO, AT_MARCHEN (D1+00), CHI (300C, FL125), CAORLE, PORTOGRUARO, PENNY, LIPA

*Additional Departure Procedure Information:

Adriatica 1 Roska 1L/M Vicenza 6 Tibro 1L/M	Airspeed 350C, climb to FL110, or as assigned
Risom 1A/B	Airspeed 350C, climb to FL130 or FL110 as assigned

Attachment 19 (Added-AVIANOAB)

CONTROLLED EJECTION / JETTISON AREAS

**Alternate External Stores Jettison (FUEL PERMITTING):**

EJ 3 JETTISON (0.5NM radius) N4358.300 E1414.983 0'	AVI 150/140 SFC-8000MSL
EJ 6 JETTISON (0.4NM radius) N4203.967 E1722.033 0'	AVI 136/315 SFC-8000MSL
EJ 8 JETTISON (0.5NM radius) N4120.000 E1844.000 0'	AVI 133/388 SFC-FL150